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THE
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J. J. CASSIDY, M.D., EDITOR.

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VOL. X.

TORONTO, JULY, 1901.

NO. 1.

Original Contributions.

ON THE USE OF NITROUS OXIDE AND ETHER AS AN ANESTHETIC.

BY L. COYTEUX PRÉVOST, M.D.

Gynecologist to St. Luke's Hospital, Ottawa.

I CONSIDER bad all anesthetization which kills the patient and, in the meantime, destroys at a stroke the reputation of a surgeon. Am I conciliating enough? Is this proposition satisfactory to all? I am sure it is.

Now that I possess the intimate conviction of having, at last, my opinion shared by everybody, I shall humbly venture to add that we are justified in calling anesthetization defective also, when the poor patient finally loses consciousness only after fifteen or twenty minutes of anguish and struggle against the threat of imminent smothering, or when sensibility suddenly returns, accompanied with disorderly movements at the first contact of the knife. Detestable again the anesthesia, when the surgeon operates, a prey to the most uncomfortable anxiety, with his eyes riveted as often upon the undecided manœuvres of the anesthetist as upon the field of operation; that he is, at every moment, compelled to discontinue his work, waiting with folded arms until the patient, half awake, is again put to sleep.

At last, unsatisfactory again is anesthesia, when the after-effects of the operation have acquired an exceptional character of gravity by the fact of an objectionable anesthetic, or owing to the imperfect manner in which it has been administered.

Therefore, I could not help being overpowered by the greatest stupefaction when lately, at a meeting of a medical association, I heard an honorable confrere making without a frown the following declaration:

"The practice of anesthesia is the easiest and the simplest thing in the world.

"Anybody whoever can properly administer an anesthetic, and it is not necessary to possess so much intelligence and experience to do it.

"I have yet, personally, never seen anybody die from anesthesia.

"It is ridiculous to pretend that special education is required to be a good anesthetist. One should, then, as well exact similar qualifications to treat a case of pneumonia, a meningitis or typhoid fever."

Tell me, gentlemen, do you not think life a little too short to stop and answer those pseudo-arguments?

After all, everybody is the master of his own opinion, and has the right to suit his taste.

As far as I am concerned, I contend that the practice of anesthesia is an extremely important operation, and anybody who undertakes it is laboring under an immense responsibility. It is in the hands of the anesthetist that the patient confides his life, and on his ability as much as the surgeon's rests the immediate or ultimate success of the surgical operation.

To treat this subject inconsiderately, as it is done in some places, is, to my mind, nothing less than criminal. Almost every day, medical reviews contain the relation of fatal accidents occurring during anesthesia, and what if they related the innumerable "starts" after which hazard and good luck, as much as the skillfulness of the attendants permitted to resuscitate individuals who had the narrowest escape with their life. And then, what anxiety, what appalling fright! An inexperienced anesthetist had undertaken the administration of an anesthetic agent upon whose properties he has but the most superficial knowledge. Little conversant with the warnings which the character of the pulse, the respiration, the condition of the pupil, generally give to the educated anesthetist; possessing insufficient experience to constantly remain sheltered against the surprises of an accident, he continues his operation without the least apprehension, automatically as it were, when, all of a sudden, the patient ceases to breathe. The face becomes livid, the tissues flabby, inelastic; the pulse is imperceptible. Quick, hurry, artificial respiration; the patient is going to die, if he has not already breathed his last.

Everybody then hustles about. The surgeon himself—for, after all, he is the general commanding the action, and therefore

entrusted with the greatest responsibility—the surgeon, washed, scrubbed, purified, antiseptized, rushes to the arms of the moribund, and during three, five, ten minutes, conscientiously pumps the air into the inert lungs of the victim, while the assistants bring into play all the other accessories reputed successful in reanimating life. At last! Oh, what a sigh of relief is emitted from everyone's breast, and accompanies, with a touching unanimity, the feeble groan which for the patient is the forerunner of the resurrection! He is saved! But what a fright, O Lord!

The operator resumes his work, which he shall continue to the end, but not without being unpleasantly caressed from time to time by a chill of goose-flesh all along his nervous system.

These cases, gentlemen, remain unpublished, and do you think they are very uncommon? As far as I am concerned, it has been my misfortune to witness them, outside of my operating room, though, I hasten and am proud to say. I have seen them out of the city where, at times, I have occasion to be called to perform operations at the house of the patient. In those conditions, you are as well aware of it as I am, we are not, as in the hospital, surrounded by our usual assistants. It is generally the family physician who obligingly offers his services to act as anesthetist. Certainly, some of them are very clever, although it is always easy to notice quite an explicable lack of experience; but, how many others there are who, feeling the paramount importance of the functions which they are going to discharge, bring with a visible emotion and almost trembling near the mouth of the patient the cone containing the mysterious agent which will plunge the unfortunate being in a condition so similar to death, even when anesthesia is perfectly regular. It is easy for the operator, if he gives a stealthy glance upon the features of his confrere, entangled in the fulfilment of functions to which he is not accustomed, to detect on the latter the anxiety which tortures his mind, and the knowledge of this fact is far from being of such a nature as to promote the calmness so necessary to the surgeon at the beginning and in the course of a serious operation.

And, anesthesia at the dentist's. Let us say a word about it. It is, if I am not mistaken, comparatively the most frequent source of the accidents we generally hear of. I do not wonder at it, and the only thing which surprises me is that they are not of more frequent occurrence.

Every physician has, at least once or twice a year, occasion to send a patient to the dentist to have teeth removed under anesthetics. Naturally it is he, the family physician, who, at the client's earnest request, is asked to administer the chloroform. These rare opportunities to handle an anesthetic constitute, in the majority of cases, the entire amount of experience which the physician possesses upon the subject.

At times, we happen to read in some of the periodicals the following terrific news: "Mr. — died yesterday in the dentist's chair while being under the influence of chloroform."

But what we do not read is the more frequent fact of a patient anesthetized by the family physician, and upon whom the dentist, forceps in hand, is awaiting the propitious moment to begin his surgical functions. With the extraction of the first tooth the patient emits a scream, wakes up, and struggles with the feeble strength left to him, against the pain and the actions of the dentist, who thinks best never to stop once his work is commenced. The improvised anesthetist witnesses immovable the scene which is taking place, and penetrated, I am sure, by the intimate conviction that, although there is no death to record, his anesthetization has been all the same an utter failure on the whole line. This, however, will not deter his beginning again a few months later, and perhaps with the same result. Neither he, his client, nor the dentist have realized the dangers they have escaped, because really, if no one could detect the signs of complete anesthesia, how could they have been made aware of the precursory symptoms of fatal accidents? All these are well-known facts, and I do not think that I may be accused of exaggerating.

How is it, therefore, that we have not already recognized the necessity of possessing, in every city, at least one or two medical men thoroughly educated on that subject, and to whom would be confided the duty of administering anesthetics in surgical operations? Everybody would derive benefit from it; the client, the operator, and the anesthetist himself, who would find in the patronage extended to him by every practitioner a remunerative compensation for the hours which he would take away from the practice of his profession, and also a precious competence which experience alone can acquire.

If some take umbrage at this specialization—and why? may I ask you—if it is deemed useless, unreasonable, in the name of humanity and the profession, let us take some means at least to protect our patients against these dreadful surprises, of which the operating room is too often the scene. Let us put an end to our confiding, in our hospitals, the administration of anesthetics to the youngest and most inexperienced. Let us make a rule never to allow the medical student to act as anesthetist until he has acquired a special and prolonged experience, after having passed, if it is necessary, an examination upon this subject, compelling him, at least, to observe during a determinate period the anesthetist in charge, whom he would see at work, and who would be entrusted with the education of the younger ones.

And to guard ourselves against the uneasiness and the misfortunes to which we are exposed in our private practice, would it not be proper to follow the wise advice given by Dr. Boldt, of

New York? This eminent surgeon, whose friend I am proud to be, after a series of unfortunate accidents which had befallen him during anesthesia, said in the course of a communication made in 1887 to the Society of Medical Jurisprudence of New York:

"On careful consideration of the subject, it has seemed to me that it would be advisable to have a medical college rule, making it a necessary requirement for every candidate for the degree of Doctor of Medicine, to receive a certain amount of practical training in the administration of anesthetics before such degree is conferred, so as not to trust to good luck for the obtaining of first experience at such great risk as is the case in the vast majority of instances at the present time; and secondly, to prevent hospitals from entrusting this most responsible position, next to the operator himself, to the most inexperienced gentleman of the house staff, until he shall have received sufficient experience."

There are a great many hospitals which employ a physician whose exclusive or special duty is the administration of anesthetics. All hospitals, in my humble opinion, should follow that example. We owe this moral obligation to those who place their existence in our hands, and such a procedure would be, for the surgeon himself, an invaluable source of security and satisfaction.

The argument which we sometimes receive from those who refuse to accept the righteousness of this proposition, makes me smile. They never have, they say, followed this practice, and still never have they met with any accidents. Do they want to wait until they have a fatal case to record before they put a term to their imprudence? What is to them, then, the bitter experience of others on this subject?

All that I have just said must lead you to believe—and you are right—that I do not accept without reserve the well-spread opinion that complications arising during anesthesia are generally due to idiosyncrasy of the patient rather than to a defective administration of the anesthetics. It is a well-known fact that when anesthetics are trusted in the hands of an educated and careful surgeon, the mortality from their use is reduced to the minimum, and there is no doubt that many deaths have been caused through the want of proper knowledge and experience.

I have more than one reason to believe that these accidents would have been avoided in a great number of cases, had a more competent anesthetist been placed at the head of the patient. I am far from pretending that anesthetization in skilled hands is always deprived of risk and dangers. Certainly not, but we must all the more surround ourselves with every precaution, and endeavor to put on our side as many chances as possible.

A good and satisfactory anesthesia must, to my mind, possess the following qualities: (1) Offer the least risk possible for the

patient; (2) be rapid; (3) complete; (4) permanent; (5) followed by as few disagreeable post-operative effects as possible.

In order to obtain the realization of these conditions, we must pay attention to the qualifications of the anesthetist and to the nature and mode of administration of the anesthetic employed. The person who administers the anesthetic should be prudent, educated, and experienced. He must take into consideration the age, temperament, condition of health of the patient; the nature and approximate duration of the operation to be performed. He should be thoroughly conversant with the chemical, physiological, and toxicological properties of the anesthetic agent which he is going to use. He should, before all, exclusively mind his business, without for a single moment allowing his attention to be diverted by the manœuvres of the operator, however interesting the latter may be. His hands, eyes, and mind should be on his duty alone, exercising constant watch upon the pulse, respiration, the condition of the pupil, continually keeping in mind the significance of phenomena which might happen into the field of his observation.

In the choice of the anesthetic, the surgeon must be guided by his general knowledge and his personal experience, and employ the agent which, in his judgment, offers the least risk to the patient, and the administration of which is accompanied with the least unpleasantness, and followed by the least disagreeable after-effects.

It is not my intention to enter into these interminable discussions concerning the relative value of ether, chloroform, A C E mixture, etc., etc. I simply desire to offer for your consideration the results of my personal experience during the last two years, at the hospital as well as in my private practice. I hasten to declare that, faithful to the principles I have enunciated, it has been my good fortune to have been assisted in all my operations by the same anesthetist, Dr. C. W. Gorrell, of Ottawa, to whom I am happy to pay the largest tribute of congratulations upon his consummate ability and his thorough competence.

The agent we have employed is ether. After using it alone at first, we have lately associated with it the nitrous oxide, given at the beginning of anesthesia, by the means of Clover's inhaler. So far, I consider this mode of anesthetization as absolutely ideal, as much for the rapidity with which the patient becomes anesthetized as for the freedom from all unpleasant sensations during the process of anesthetization, and the diminution of after-symptoms so frequent after operations.

Here is, in a few words, the method of anesthesia which we have recourse to:

The apparatus which we have been using for the administration of nitrous oxide and ether is the Hewitt's inhaler. This

consists of a Clover inhaler with the rubber bag replaced by a large bag with valvular attachments. One end of this bag has a stop-cock, through which the nitrous oxide is allowed to enter from the gas cylinder into the bag. At the other end, the bag is connected with the Clover inhaler by a series of valves and conducting tubes. The two main valves we may call the inspiratory and the expiratory valves, the latter being double, that is, covering two openings. The inspiratory valve is next to the gas bag. The valves being opened, allow the gas to pass directly from the bag to the lungs, the expiration passing through the expiratory valve to the open air. When the expiratory valve is rotated, it partly closes the aperture for the exit of expiration to the open air, and partly opens a valve leading to the gas bag. When the expiratory valve is completely closed, the valve leading to the gas bag is fully opened, making what is to all purposes a Clover inhaler, using the nitrous oxide gas.

The gas bag is filled with nitrous oxide. One ounce of ether is placed in the cylinder of Clover inhaler, the indicator turned to zero.

The patient is warned that some disagreeable sensations may be felt at first, but that unconsciousness will come on after a few breaths.

The mouth-piece is then fitted to the face of the patient, who is instructed to breathe easily a few times, to prove that the valves are working. The valves connecting the nitrous oxide bag with the Clover is now opened, and the patient told to breathe deeply. After four or five respirations, the indicator of the Clover is turned one-eighth from zero to 1, and the expiratory valve is closed about 1-4. If patient bears ether well, the indicator may be turned rapidly to 1-2-3, or full. The expiratory valve is slowly closed. When anesthesia is complete, the gas bag is removed and the ordinary Clover bag substituted.

Within the last two years, we have been using this mixed method almost exclusively, and perhaps it will be of some interest to you to know the results we have obtained with regard to the time required to induce complete anesthesia:

NITROUS OXIDE AND ETHER, 307 CASES.

Anesthesia in.....	1	minute.....	24	times.....	7.8	per cent.
"	1½	"	55	"	17.9	"
"	2	"	94	"	30.6	"
"	2½	"	47	"	12	"
"	3	"	44	"	11	"
"	3½	"	9	"	2.9	"
"	4	"	19	"	6.1	"
"	4½	"	1	"	.3	"
"	5	"	14	"	4.5	"
"	less than 2	"	79	"	25.5	"
"	" " 3	"	220	"	71.6	"
Longest time (5 minutes).....			14	"	4.5	"

At first sight, it might seem strange that in 14 cases, anesthesia was not complete until after five minutes, and in the face of the fact that we claim an unusual rapidity of action for this mode of anesthesia.

The only explanation I can offer is that sometimes it is difficult to get the mask of the inhaler to fit accurately the faces of certain individuals, especially men with moustache and whiskers. In these cases I believe it advantageous to wet the beard before applying the cone, in order to secure better adaptation and prevent the respiration from taking place through the dry hairs.

Let us now compare the above figures with the results following the administration of ether alone.

ETHER ALONE, 132 CASES.

Anesthesia in.....1	minute.....0.0.0.0.
".....1½	".....0.0.0.0.
".....2	".....7	times.....	5.3	per cent.
".....2½	".....7	".....	5.3	"
".....3	".....21	".....	15.2	"
".....3½	".....12	".....	9	"
".....4	".....28	".....	22.7	"
".....4½	".....6	".....	4.5	"
".....5	".....14	".....	10.6	"
".....5½	".....1	".....	.7	"
".....6	".....12	".....	9	"
".....7	".....9	".....	6.8	"
".....8	".....5	".....	3.8	"
".....10	".....9	".....	6.9	"
".....14	".....1	".....	.7	"

Thus, never with ether alone, have we succeeded in inducing complete anesthesia in less than two minutes, a result which we have obtained in 25 per cent. of our cases in making use of nitric oxide. On the other hand, with the mixed method, the time required never exceeded five minutes, whereas this time has been reached or exceeded with ether alone in 37 out of 132 cases, that is, in 28 per cent. I need not dwell any longer upon the advantages to the surgeon of this shortening of time in the process of anesthetization. To the patient, these advantages are: The rapidity with which she or he becomes anesthetized, the freedom from all unpleasant feelings, such as smothering sensation, irritation of the throat by the vapor of ether, etc.

As regards the quantity of ether employed by the use of one or the other mode of anesthetization, it was not our experience to perceive any difference at all, the amount of ether being practically the same in both cases, a fact which is obviously evident when we consider that, in the mixed method, the ether is allowed to be inhaled almost at the beginning of anesthetization.

Now, gentlemen, what has been our experience concerning the effect of ether alone, or with nitrous oxide upon the kidneys? Does it confirm the opinion so universally entertained that ether

is apt to produce renal irritation, albuminuria, very frequently nephritis, and sometimes total suppression of urine. I said it already, it is not my intention to enter into this everlasting controversy, aiming at the proclamation of the advantages of one anesthetic agent over another. Upon that question, as with regard to all opinions which haunt the human mind, "*tot sensus, tot capita*." Some profess a religious faith in chloroform; they are not only entirely convinced of its numerous advantages, but they are, besides, so deeply impressed with the idea that ether has been guilty of so many misdeeds that, according to them, this agent should be unmercifully banished from the class of anesthetics. Others swear by ether exclusively; another group is composed of the admirers of the A C E mixture.

Here, as well as in everything, I deem that the wisest are those who conform themselves to the indications offered by the patient, the nature and complications of the disease, and also to the more or less experience they have acquired with the anesthetic of their choice.

Chloroform especially has had, and has still, its detractors. Ether, on the other hand, is not in want of enemies. One of the greatest faults which are found with it is its harmful action upon the renal functions. This subject periodically returns at almost every meeting of our medical associations. I do not want to make any citations, but I have present in my memory the names of eminent surgeons who have in turn related cases of albuminuria, nephritis, and suppression of urine, which they attributed without the least restriction to the irritant influence of ether upon the kidneys.

I have, indeed, the utmost respect for the authority of these great names, and I reluctantly resist the impulsion of bowing to their judgment and their experience. However, may I be allowed to humbly ask one question? A patient is being prepared to undergo a major operation. Urine is analyzed before anesthesia and is found normal. Ether is given, the operation takes place, and 24 hours or more afterwards there is albumen in the urine or the functions of the kidneys are disturbed, even entirely suppressed. Will you, please, tell me to which of the following causes the pathological disorders should be attributed:

1. The irritant action of ether upon the kidneys.
2. The shock caused by the disturbance produced in the renal circulation through manipulations of organs having, with the vascular system of the kidneys, a close relation by the means of the nervous plexuses by which they are connected.
3. The elimination, through the kidneys, of infectious agents which have been brought into greater activity and virulence by the fact of the surgical traumatism, and which the organism is endeavoring to get rid of by all its emunctories.

4. The congestion of the kidneys produced by possible exposure to cold on the operating table.

I offer for your consideration these various propositions, to which I have neither the intention nor the desire of finding a solution. Dr. Mann, at the meeting of the American Gynecological Society, May, 1898, announced that he had found albumen in 50 per cent. of his cases anesthetized with ether.

These data differ a great deal from the results of my own investigations. I make it a duty to examine, in every case, the urine of my patients before and after anesthesia, and although I am well aware that the absence of albumen is not always a criterion of the integrity of the renal parenchyma, still I will beg the permission to state the results of my observation.

I hasten to say that the quantity of albumen found in my cases has been almost the same after anesthesia by ether alone, or associated with nitrous oxide, the slight difference being in favor of the latter.

Out of 434 observations, albumen was found 26 times, that is, in six per cent. of the cases. In the immense majority of these cases the urine, after operation, contained but insignificant traces of albumen, which generally disappeared within 24 to 48 hours.

ALBUMINURIA AFTER ANESTHESIA.

OPERATIONS.	AMOUNT OF ETHER.	TIME OF ANESTHESIA.		REMARKS.
		H.	M.	
Removal of intra-uter. polyp.	2 ounces.		20	Traces. None after 24 hours.
Laparotomy.	4½ "	1	20	Traces. None after 24 hours.
Schroder and nephrorrhaphy.	4 "	1	35	Traces. None after 24 hours.
Curetting.	2 "		20	Traces. None after 24 hours.
Laparotomy (pyosalpinx).	4 "		50	Traces.
Radical cure (hernia).	5 "	1	20	Traces. Disappeared on 4th day.
Schroder; colporrhaphy, laparotomy and oophorectomy.	6 "	1	35	Albumen; disappeared in 12 hours. Returned on the 7th day. None on the 19th day.
Ventro-fixation.	3 "		30	Traces. None after 24 hours.
Laparotomy (pelvic abscess).	5 "	1	15	½ gr. to litre after operation. ½ gr. 24 hours after operation. ½ gr. on the 4th day. None on the 7th day.
Fistula in ano.	3 "		35	Traces. None after 24 hours.
Vag. hysterectomy.	3½ "		40	½ gr. to litre the first 3 days. Diminished gradually. None on the 8th day.
Laparotomy.	3½ "		40	Traces. None after 24 hours.
Ampt. of the breast (cancer).	3 "		45	Traces. None after 24 hours.

ALBUMINURIA AFTER ANESTHESIA.—(Continued.)

OPERATIONS.	AMOUNT OF ETHER.	TIME OF ANESTHESIA.		REMARKS.
		II	M	
Laparotomy (ectopic gestation).	4½ ounces.	1	15	<p>¼ gr. to litre after operation. None after 24 hours. Returned on the 10th day, 1 gr. per litre.</p> <p>On the 11th day: ¼ gr. per litre.</p> <p>“ “ 14th “ ¼ gr. “ “</p> <p>“ “ 17th “ 1-16 gr. per litre.</p> <p>“ “ 19th “ ¼ gr. “ “</p> <p>“ “ 25th “ none.</p>
Abd. hysterectomy.	7 “	2		<p>¼ gr. per litre after operation.</p> <p>1-16 gr. 24 hours after operation.</p> <p>None after 48 hours. Returned on the 38th day, ¼ gr. per litre. Disappeared gradually in 3 days.</p>
Nephrorrhaphy.	3 “		50	<p>1½ gr. per litre after operation.</p> <p>¼ gr. “ “ 24 hours after.</p> <p>Traces on the 7th day.</p> <p>None on the 8th day.</p>
Laparotomy (intra-lig. cyst).	3 “	1	10	Albumen, ½ gr. to litre. None on the 3rd day.
Laparotomy (ectopic gest.).	6½ “	1	45	Albumen present. None after 48 hours.
Colpotomy (pelvic abscess).	2½ “		20	Same patient as above. Colpotomy done 10 days after first operation. No albumen before anesthesia; traces after. None after 24 hours.
Laparotomy (removal of pad).	2½ “		30	Abdominal hysterectomy the day before. Gauze pad forgotten in abdomen. Abdomen reopened the next day. No albumen before anesthesia. Traces 24 hours after. None after 48 hours.
Laparotomy (intes. occlusion).	5½ “	1	40	Traces. None after 48 hours.
Appendectomy.	4 “	1		Traces. None after 48 hours.
Curetting.	2 “		30	Traces. None after 24 hours.
Curetting.	2 “		35	Traces. None after 24 hours.
Nephrorrhaphy.	5 “	1	35	Traces. None after 24 hours.
Schroder. Colporrhaphy, laparotomy (ventro-fixation).	8½ “	2	10	Traces. None after 24 hours.

In casting a glance on the above table, you shall easily convince yourselves that the appearance of albumen has very little relation with the quantity of ether inhaled, or the duration of anesthesia, the albumen being detected in urine as well after the use of two ounces of ether and a 20-minute anesthesia as after the administration of six ounces of ether and an anesthesia of two hours' duration. The quantity of albumen has always been very small; never have I observed total suppression of urine. Once only, following abdominal hysterectomy, the quantity fell to five ounces in 24 hours. This considerable diminution of urinary secretion was accompanied with no alarming subjective symptoms

whatever, and under the influence of hot applications and injections of salt solution in the rectum, the physiological functions of the kidney soon became normal. Therefore, although I deem prudent not to indulge in false security, I am compelled to confess that my personal experience renders very slight, to my mind, this exaggerated fear of the injurious effect of ether upon the kidneys.

Furthermore, I shall now cite a few cases in which the examination of urine detected the existence of albumen before anesthesia, and you shall see for yourselves that anesthesia has in no wise aggravated the condition of the patient, notwithstanding the quantity of ether administered and the long duration of anesthesia in certain cases.

CASES IN WHICH URINE CONTAINED ALBUMEN BEFORE ANESTHESIA.

OPERATIONS.	AMOUNT OF ETHER.	TIME OF ANESTHESIA.		REMARKS.
		H.	M.	
Hemorrhoids and appendectomy.	6 ounces.	1	25	Albumen before operation. None on the 4th day after.
Opening and drainage of abscess in abd. walls.	3½ "		30	1 gr. per litre before operation. 1 gr. " " after " ½ gr. " " 24 hrs after operation. ½ gr. " " on the fifth day. Gradually diminished. None on the 10th day.
Examination (tuber. kidney).	1 "		15	Before operation: pus cells, blood cells; albumen: 1½ gr. per litre. 24 hours after: 1½ gr. " " 48 " " 1½ gr. " " 3rd day " 1½ gr. " " 4th " " 1 gr. " " 6th " " ½ gr. " " 7th " " 1 gr. " " 8th " " ½ gr. " " 9th " " ½ gr. " " Still some albumen when discharged.
Removal of hemorrhoids.	3 "		35	Albumen before operation. Not increased after. None on the 4th day.
Appendectomy.	4 "		50	Albumen before operation. Not increased after.
Amput. of thigh.	4 "		50	Albumen before operation. None 24 hours after.
Schroder.	3½ "		50	Albumen: ½ gr. per litre before. ½ gr. " after. Quantity of albumen oscillated between one-eighth and one-fourth during her stay in the hospital. Still one-eighth when discharged on the 18th day.
Curetting and cauterization (cancer of cervix).	4 "		50	Before operation, albumen: ½ gr. After " ½ gr. Same quantity when discharged on the 5th day.
Vag. hysterectomy (cancer).	5 "		45	Albumen before operation. None 48 hours after.
Cauterization (cancer).	2½ "		25	Albumen before. None 24 hours after operation.
Bassini (strangul. hernia).	6 "	1	35	Albumen before. Traces 24 hours after. None 36 hours after.

CASES IN WHICH URINE CONTAINED ALBUMEN BEFORE ANESTHESIA.
(Continued.)

OPERATIONS.	AMOUNT OF ETHER.	TIME OF ANESTHESIA.	REMARKS
		H. M.	
Abdom. hysterect.	7 ounces.	1 40	Albumen, blood cells and casts before. Diminution of urinary secretion for the first 24 hours after operation. Albumen not increased. Still albumen and casts when discharged on the 28th day.
Explor. laparot. (cancer of uterus and bowels).	3½ "	1	Blood and albumen before operation. Urinary secretion normal after operation. Same quantity of blood and albumen.
Appendic. abscess (operation).	1 "	25	4½ gr. per litre before operation. ½ gr. " " 12 hours after. ½ gr. " " 24 " " None 48 hours after operation. ½ gr. on the 4th day. None on the 5th and following days.

This last case is, I believe, extremely interesting. I performed the opening and the drainage of the appendicular abscess in presence of several medical gentlemen, who had done me the honor of witnessing the operation. I drew their attention to the fact that the urine of the patient contained 4 1-2 grains of albumen per litre before anesthesia, and they could ascertain for themselves the next day the almost complete disappearance of albumen, in spite of the inhalation of ether used to anesthetize the patient.

A few words concerning the vomiting which follows the mixed anesthesia by nitrous oxide and ether, and I am done with that part of my subject. Vomiting has been obviously as frequent after anesthetization with nitrous oxide and ether as with ether alone, and I will unite in the same statistic the results of my observations.

Out of 439 cases of ether, administered alone or associated with nitrous oxide, 279 patients vomited after anesthesia, that is, 63.3 per cent.

I grant you that, at first view, there is nothing in these figures that we should boast of. But let me tell you that the vomiting recorded in the observations occurred, in the majority of cases, with the awakening of the patient, and before entire consciousness had returned. It has been extremely rare that patients continued to vomit when completely out of the anesthesia, or within the 24 hours following the operation.

This vomiting occurred with the immediate return of consciousness. Far from being objectionable, I deem it eminently salutary. It permits the bronchial tubes to get rid of the mucus they contained and, immediately afterwards, the patient usually falls back in a quiet sleep, out of which he awakes without the least nausea. If, by exception, the vomiting shows a tendency to

return, it is almost instantly relieved by a sinapism to the epigastrium. I showed you above that the appearance of albumen in urine has not always offered a direct relation between the duration of anesthesia and the quantity of ether administered. It is, I believe, interesting to draw your attention to the fact that we have observed the same thing with regard to post-operative vomiting, and I can point out from amongst the long operations which were accompanied by no vomiting whatever, the following cases:

OPERATIONS.	ETHER.	DURATION OF ANESTHESIA.		VOMITING.
		H.	M.	
Abdominal hysterectomy.	6 ounces.	1	45	None.
Laparotomy.	5½ "	1	30	"
Laparotomy.	4½ "	1	25	"
Laparotomy.	5 "	1	35	"
Abdominal hysterectomy.	5 "	1	40	"
Laparotomy.	5 "	1	20	"
Bassini (rad. cure).	6 "	1	25	"
Appendectomy.	5½ "	1	5	"
Laparotomy.	5 "	1	45	"

With regard to medullary cocainization, spinal anesthesia, cocain analgesia, intro-spinal cocainization, subarachnoidean injections of cocain, cocainization of the spinal cord, medullary narcosis—the simple enumeration of the various denominations given to this new mode of anesthesia would constitute a whole article in itself—I have very little to say. Besides having had my name connected with the fact that I was the first to use it in Canada, my personal experience upon the subject would bring out nothing that you have not already read a little everywhere in medical literature. The technique of this small operation, the quantity of cocain to be injected, the results of cocainization of the spinal cord, are now facts universally known. My own experience is the same as what has been written by different observers within the last two years.

I certainly do not deny the fact that the surgeon may sometimes be placed in circumstances such that the fact of being familiar with this new method of anesthetization would become very handy, and besides, the surgical arsenal cannot be too complete and one would be wrong not to keep in some corner of his memory the knowledge of a special means of action, which might be of valuable assistance to him in unforeseen emergencies.

I have nothing to say against this mode of anesthesia, the unpleasant after-symptoms, and even the fatal results attributed

to it; all I want to declare is, that as long as the old and well-tried anesthetization by the means of anesthetic agents handled by competent men continue to give the same satisfaction as we have been gratified with in the past, I do not, in the least, feel inclined to abandon it for any other, until the superiority of the latter has been clearly demonstrated, which is certainly not the case, so far, with medullary narcosis.

SOME PRACTICAL FEATURES IN THE TREATMENT OF CONSUMPTION.

BY EDWARD PLAYTER, M.D.,
Medical Superintendent Highfields Sanatorium.

THE friends of most phthisical patients who consult me say that the family physician gave but little hope of recovery; this even in the early stage of the case. True the chances are against a patient in an advanced stage if he, or she, has to be treated at home, and the means to do so are not ample for obtaining every necessary. The progress of most cases, however, is so slow that the physician is afforded every opportunity for checking its progress, and hence for successful treatment in favorable circumstances. In the rapid progress of a case of pneumonia or acute fever it is quite different. And with many high authorities now, I am fully convinced that the disease in any stage can usually be cured, if there be no special complications, both lungs not extensively involved, and there be not much prostration from marked failure of the assimilative and circulatory organs, especially the heart, so that the patient cannot take much food or walk about or up a flight of stairs without great exhaustion, etc.

As we all know, there is no one specific, nor will there ever be, other than the supply of an excess of oxygen to make up for the want of it during that period, long or shorter, of gradual "decline" into the pre-bacillary stage, as well as later.

In view of this usual gradual "decline," of the fact that most, if not all, so-called "disease germs" are originally saprophytes, and that the formation of tubercle is a benign process,—large quantities remaining for years in an animal body, until from some cause they break down, it seems most reasonable to regard the cause of this disease as an auto-intoxication. As such I have always treated it: the bacilli as *post hoc* and of secondary consideration. Already we see articles on the "passing of the bacillus," and everywhere it is beginning to lose its hold as *the* cause of the disease.

Again, and in support of the above theory, all these patients have in the beginning an inherited or acquired want of full respi-

ratory capacity—as from small lungs, measles, bronchitis, the effects of pneumonia, very sedentary stooping occupations, etc. This means a limited supply of oxygen in the blood and system generally; the immediate cause of the auto-intoxication. This theory I have advanced and explained in my book.

Directly in support of this is our one universal panacea, the “out-door” life—practically an increased respiratory function. To increase it more, patients are sent to great elevations to force them to distend the air-chambers or cells of the lungs—to improve, attenuate and restore the respiratory membrane; or they are induced to practise certain lung exercises or gymnastics. I much prefer the latter, in or near that section of country in which the patient has become acclimated. Except in rare cases, change of climate is a great mistake.

It is gratifying to find the practice of special lung-expansion recently becoming more general. Not long ago a medical journal stated that it would have been more so had it not been so much in the hands of “irregulars,”—a weak, indeed cowardly, reason.

Never have I observed any increase of hemorrhages from it, but the reverse, as one would expect, with care in the beginning, especially in hemorrhagic cases.

Half a century ago now, permit me to relate here, when in my “teens,” I was said to be in a “decline,” chiefly from over-study, want of out-door exercise, and an indiscreet diet. After many months of treatment—drug-swallowing—by two or three of the ablest physicians in this county, a book, written by a New York “M.D.,” chanced into my hands, rationally explaining the value of the erect posture and deep breathing. The book was published, apparently, for the purpose of selling a very simple “inhaler,”—a short tube with a valve. I have the book still, and value it highly: did not buy the inhaler, but forthwith seized upon the “idea,” the function of respiration being so simply (and correctly) explained, and used my nostrils and puckered lips as an “inhaler,” and exhaler. I improved so satisfactorily that during all my practice of about forty years I have invariably employed this super-respiration as *the* remedy in phthisis.

Of “drafts,” most people are yet too much afraid. Here at Highfields Sanatorium, with deep bay windows and three-windowed tower recesses, in the cold winds of last April and May, I proved this to my satisfaction, by insisting on patients, well covered, sleeping all night between two FULLY OPEN windows, with really cold wind blowing freely over them. One excitable woman called me a “tyrant,” after I had told her she must so sleep or give up the bed to one who would do so. In not one instance did a patient suffer any evil effects, but invariably, from the first night, coughed less and slept better. I had tried this treatment on myself, will the reader observe, in the course of typhoid fever in No-

vember weather, as well as in weak lungs, and felt fully justified in the course with these patients, who appeared to be, and were said to be, hopelessly diseased.

Habitual DEEP breathing, then, night and day, of pure outdoor air, is the first remedy.

As further evidence of the need and value of oxygen as a direct remedy for tuberculosis, ozonized air has been found in the Manchester Hospital for Consumptives to give better results than any other special remedy of many tried there. We have imported for Highfields Sanatorium an ozonizing apparatus, like those used at Manchester, and expect to have the necessary cell batteries for working it put in at once, and so try this multiple of oxygen.

Of the value of sunlight and sun-baths, I need not write.

Respecting feeding, I have a positive fear of "stuffing,"—dare not attempt it. Early cases with little fever, in which considerable exercise can be taken, may improve in spite of being stuffed. One of the advantages of sanatorium treatment is that the patient's assimilative powers can be closely watched and studied, that they may not receive more than can be thoroughly disposed of. Increase of weight is not at all a positive indication of improvement. The disease will progress with increase of weight, and *vice versa*. I never aim to increase fat or flesh—rather tone and strength; and the majority of my patients lose weight for a time, with improvement in all other symptoms.

As a nutrient, I have given bovine a good deal, and been greatly pleased with it. I also frequently give a preparation of sterilized, evaporated ox-blood, with Malaga wine, glycerine, and other preservatives, as an excellent substitute.

The judicious use of the tempered bath, for promoting a healthy, vigorous skin, thus assisting the respiratory function, is of great value, and it would seem that a tuberculous patient could hardly be successfully treated without it.

Cod liver oil and creasote I administer most commonly at bedtime, in the form of inunctions. This, followed in the morning by a good wash with warm water and soap, and then a cool or cold "rub" with sponge, towel, or hand, as a tonic.

Most phthisical patients considerably advanced in the disease need rest rather than active exercise; although passive exercises are often useful and promote sleep, when given a little before bedtime.

Inhalents—antiseptic, sedative, astringent, etc., are usually best for controlling cough and improving the mucous membrane of the air passages.

Night sweats and chills soon subside with abundance of oxygen; and nausea and diarrhea, usually with a judicious diet; even, if necessary, of Wampole's malted milk, alone for a time, or concentrated beef-juice. For hemorrhages, absolute quiet, cool air and, if severe, opium, are usually sufficient.

Proceedings of Societies.

ONTARIO MEDICAL ASSOCIATION.

THE twenty-first annual meeting of the Ontario Medical Association was held in the Education Department, Toronto, on the 19th and 20th of June, 1901, the President, Dr. Angus McKinnon, of Guelph, in the chair. The secretary read the minutes of the last session of last year, which were adopted.

The report of the Committee on Papers was presented by Dr. Machell, of Toronto, and the report of the Committee on Arrangements by Dr. Bruce L. Riordan.

Three Recent Gall-Stone Cases.—By Dr. Wm. Oldright, Toronto. These cases had occurred recently in his practice. They present features of interest to the profession. The first case occurred in a woman about fifty-five years of age. He was rather surprised to be called upon to see her in a hurry, to find symptoms of gall-stone obstruction. The late Dr. Little had seen the patient, and had endeavored to obtain purgation without effect. Powerful cathartics were unavailing. About nine months previously she had a similar attack, but Dr. Oldright had heard nothing about it until this attack. The symptoms were somewhat elevated temperature, about 100 to 101, constant vomiting, obstruction, and, of course, intense pain. He supplemented Dr. Little's catharsis but without any effect. On examination he could map out a distinct tumor, and told her that she had a distended gall-bladder, and advised her to go into the hospital, which she did that night. She was operated upon in the afternoon, and he removed some gall-stones, and endeavored to establish patency of the duct. He could feel no stones left behind, but there was some stenosis of the duct. There was a great deal of inflammatory action in this case. The gall-bladder was stitched into the abdominal wall and drainage established in the usual method; bile flowed freely. The patient made a good recovery. The second case was one Dr. Oldright saw in consultation with Dr. McLean, of Woodbridge. She was sixty-five years old. The prognosis was certainly death without operation, and provided there was no malignant trouble she would probably recover. In this case one could imagine the difficulty there would have been had it been his first case of operation, as he could not locate the gall-bladder.

He came to the conclusion that it was not a case for further interference. Within twenty-four hours she succumbed to the shock and probably to some hemorrhage. There was no doubt after passing the finger in that it was malignant. If this woman had been operated on some years before, Dr. Oldright thought that malignancy would not have occurred, and her life would have been saved. The third case occurred in a woman forty years of age. Upon her the surgeon operated last February. Here was a case in which there had been gall-stone symptoms, obstruction, for about eighteen months. She consented to an operation. The obstruction was in the cystic duct. He opened the gall-bladder and took out the stones, which he exhibited to his audience. The operation occupied about forty minutes. The patient made an uneventful recovery, and left the hospital thirteen days after the operation.

Dr. Garrett, of Kingston, said that operative interference in gall-bladder surgery has only recently been brought into prominence. Early diagnosis is very important. We should operate at once when we make a diagnosis. He referred to a case which had been diagnosed as catarrh of the stomach, upon which he had operated and had extracted 170 stones from the gall-bladder.

Dr. T. Shaw Webster, Toronto, asked Dr. Oldright if there are not some cases where it would be better to wait for a little while, in cases where there is a strong probability that the condition will disappear in a short time.

Dr. Oldright, in reply: As soon as we are satisfied of gall-stone obstruction—as soon as acute symptoms have subsided—we should operate, and not allow repeated attacks to go on until malignant disease is established.

Excision of Upper Jaw for Sarcoma, with Exhibition of Patient and Specimen.—Dr. Herbert A. Bruce, Toronto, presented this paper, whilst Dr. G. Silverthorne exhibited the specimen. Dr. Bruce also presented the patient, a woman thirty-four years of age, from whom he had removed the upper jaw for sarcoma. The patient had been sent to him by Dr. Bowles, of Woodhill. The history of the patient is briefly as follows: During the last week of January of this year she felt for the first time a slight swelling over the alveolus of the left jaw, which she thought to be a gum-boil. She consulted Dr. Bowles at the end of March, and Dr. Bruce saw her about the middle of April—that is, less than three months after the first symptoms. Dr. Bruce operated upon her on the 29th of April, exactly three months after the first symptom she had. On examination he found a very hard swelling just behind the second bicuspid tooth, and extending backwards to the full extent of the jaw. Internally it had not extended to the middle line, and bulged externally to the extent of half an inch beyond what would be the line of the

teeth. It extended backwards towards the antrum, but the latter did not seem to be implicated externally. The growth in the roof of the mouth was covered by a mucous membrane. On looking into the nose a polypoid mass was seen, and the patient had some difficulty in breathing through the left nostril. The cheek on the affected side was slightly more prominent, and it moved freely over the growth. No prominence of the eye on the affected side was noted. A small portion of the growth was removed under cocaine, and Dr. Silverthorne reported to Dr. Bruce that it was sarcoma. The patient left the hospital on the 18th of May, and made an uninterrupted recovery.

Dr. Silverthorne presented the specimen to the members of the Association. It was the size of a large-sized orange, containing spindle cells, with a cartilaginous basis.

Dr. Bruce stated that the history of the patient showed that a polypus had been removed about eight years ago, and he thought that it must have been a simple polypus.

Ectopic Gestation.—By R. W. Garrett, M.D., Kingston. He extended his thanks to the Committee on Papers for placing under his care a subject of such great magnitude. The subject is one of vital importance to every practitioner, for at any time he might be called upon to differentiate the condition from others with which it might be confounded. The responsibility of a life was in his hands, and demanded accurate diagnosis, medical acumen, and judgment and ability, to conduct the case to a favorable termination. He entered at considerable length as to the causation and earlier changes consequent upon ectopic gestation, and stated that every physician is expected to make a correct diagnosis of tubal pregnancy on the occurrence of rupture, and in a fairly large proportion of cases to make a diagnosis before the occurrence of rupture. Theoretically, the arrest of a fructified ovum may occur first in the ovary; second, in the abdominal cavity between the ovary and tube; third, within the tube, and fourth, between the tube and the uterus. He would direct the attention of his audience to but one kind only—arrest within the tube, or tubal pregnancy, as all other varieties are but merely developments of this kind, owing to secondary invasion of the Fallopian tube. These he divided into three groups—first, tubo-abdominal, or simply abdominal pregnancy, in which there is a secondary invasion of the abdomen; second, tubo-ligamentary, in which there is a secondary invasion of the broad ligament and sub-peritoneal tissues, and third, that subdivision of the tubo-uterine in which there is rupture into or secondary invasion of the uterus. At considerable length he discussed the etiology, then the symptoms, pointing out the difficulties that lie in the road to making a diagnosis, owing to the absence of many, if not of all, the classical symptoms generally enumerated. Having dealt with these in a masterly

manner, he recited a very interesting case in illustration of his contention of the difficulties of diagnosis.

Dr. J. F. W. Ross followed Dr. Garrett in the discussion regarding the diagnosis as the most important point of all, and especially the diagnosis before rupture. He thought that we ought to be able to diagnose these cases before rupture had taken place. What are the symptoms? Generally four or five symptoms. He referred to the pain that is indefinite, not severe, not acute, but a feeling as if something were wrong. He referred to several cases recently seen in practice.

Dr. Powell referred to a case where Dr. Ross had diagnosed the condition before rupture had occurred.

Dr. Oldright mentioned a double rupture of both tubes.

Dr. A. A. Macdonald complimented Dr. Garrett on the careful manner in which he entered into his subject, and thought it was one of the greatest importance to the general practitioner. He remembered the time when it was stated that no one could make the diagnosis before rupture. He referred to a case which came into Bellevue Hospital, comparatively recently—a case of twins, in which one child was delivered in the natural way and the other child ectopic.

Dr. T. S. Webster said that the subject was one that he had taken a great deal of interest in, and has had to deal with four of these cases.

Dr. Prevost, Ottawa, showed a specimen, and said that sometimes, in spite of the most accurate diagnosis, we make mistakes. He described the case, the specimen of which he presented.

Dr. A. F. McKenzie, Monkton, referred to a case seen in his practice, which went on to full term and was delivered of a large child, and no trouble. He further spoke of the difficulty in making the diagnosis in these cases.

Dr. Machell thought the interest centered in the diagnosis.

Dr. McKinnon, the President, stated that he had not had much experience with these cases before rupture, but had had a little experience after rupture. He thought frequently there might be danger in making a mistake. He also cited a case occurring in a young married woman with a little child five or six years old.

Dr. Garrett closed the discussion, and thanked the members for their generous treatment of his paper. He considered that discussions of this character were of the greatest moment. Rupture is generally about the third month, and interstitial pregnancy can go on to much longer term than tubal pregnancy, and in this form we generally have external rupture.

AFTERNOON SESSION.

President's Address.—Dr. McKinnon delivered a very able address on the opening of the afternoon session. He considered that it was great honor to be elected President of this, the largest and most influential medical association in the Dominion of Canada. Having referred to the success of the meeting so far, he proceeded to contrast the state of medicine at the beginning of the last century with that of the present, and compared the vast advantages we to-day possess over those of one hundred years ago. Anesthesia, antiseptics, asepsis, vaccination, the antitoxine treatment for diphtheria, the discovery of bacillus of tuberculosis, were mentioned, and he looked for the dawn, in no far distant day, of that grand and glorious day when we can say to the world that tuberculosis and cancer can both be cured. He deplored the growth in the employment of new proprietary remedies, and thought that harm was being done to the medical profession by manufacturing firms making up pills for neuralgia, for malaria, etc. He considered that the literature and drugs sent out to medical men by these manufacturing houses had become an intolerable nuisance. The electric belt man, the Christian Scientist, the advertising cancer-curer, the osteopath, and many other such like fakes which hang on to the skirts of medicine, he scored most unmercifully, and regretted that the public press, both secular and religious, opened their columns freely to these fulsome, untruthful, and sometimes immoral advertisements, because they pay well. There was great danger to the public in permitting Christian Scientists, the "pray-for-hire-healers," and "Dowieites," impudently undertaking to cure infectious diseases such as diphtheria, scarlet fever, and small-pox, diseases which they are unable to recognize, and we think that we have come to a point where toleration and forbearance becomes criminal. The 2,500 medical men in Ontario should have influence enough to obtain from the Legislature an amendment to the Medical Act, that will put an end to this trifling with human life. He directed attention to the delay that occurs in securing admission to the asylums for people the subject of acute mania, and thought that it was high time the necessary steps in this department in the practice of medicine should be simplified.

Pulmonary Tuberculosis: Its Treatment in Special Sanatoria.—Dr. J. H. Elliott, medical superintendent of the Sanatorium at Gravenhurst, read this paper. Speaking generally, it may be said that from fifty to seventy per cent. of the incipient cases are restored to health, while from all classes from fifteen to thirty per cent. are reported cured or arrested, in sixty to seventy per cent. a marked improvement. The first thing noticeable after

entering the sanatorium in most cases is an improved appetite, a gradual gain in weight, and a decline in the evening temperature. With this improvement, night-sweats disappear without medication, cough and expectoration noticeably lessen, and the patient sleeps until morning. The principles generally adopted are: First, a continual life in the open air, with rest or exercise as indicated; second, a liberal, suitable diet; third, medicinal treatment according to indications, and to a great extent symptomatic; fourth, hydro-therapy; fifth, a strict medical supervision of the patient's daily life.

Speaking of the "rest-cure" in febrile cases, the object is to reduce muscular exertion to the least point consistent with the ingestion and proper assimilation of a good diet. Referring to medicinal treatment, with an hygienic life, pure medicines are required. The various tuberculins and serums are being used both in America and Europe with the prospects of yet securing a specific of those cases where mixed infection is absent. Constant supervision of the patient is the most important point in which the sanatorium treatment must necessarily differ from that adopted by the general practitioner. Living as he does with his patients, adopting their mode of life, having his meals in common with them, the physician is enabled to individualize the treatment, and though on broad lines the patients all receive the same treatment, each one has to be studied in detail, and the indications met accordingly. The chief point, under all circumstances, is that the patients, wherever they may be, live prudently, and be under the care of an intelligent and firm physician.

Dr. Price Brown referred to the advisability of sending patients for sanatorial treatment, and stated that we have for every disease places to send our patients—hospitals throughout the length and breadth of the land—except for tuberculosis. Having recently been at Asheville, N.C., he described the treatment which he had seen carried on in that institution.

Dr. John Hunter, Toronto, deprecated sending these patients long distances away from their homes, which was formerly the custom, but is not so now. He hoped to see the time when there would be a large number of these institutions established in this country.

Dr. Elliott, in replying, strongly emphasized the point that there should be no exercise when the evening temperature is above 99 degrees; it may be permitted in the morning, if it reaches one hundred or one hundred and a half, but not in the evening.

Vaccinal Protection Against Small-pox.—Dr. P. H. Bryce, Toronto, the Secretary of the Provincial Board of Health, presented this paper. In the introduction to his paper he expressed the belief that, although the practice of vaccination against small-pox has existed for a century, there never was a time since it was

formally accepted by the profession when there was so much expressed scepticism as there was to-day on the part of the laity with regard to its protective qualities, and never a time when the profession has been so indifferent as to impressing the necessity of its proper performance upon the public. In Ontario, between 1898 and 1899, there were but twenty-two recorded deaths from the disease. He made special reference to the art of vaccination and the quality of the lymph, and thought five separate insertions should be made in each case. The quality of the lymph was very important. He thought that a medical man going out from the college did not receive sufficient practical instruction on this most important subject.

Mr. I. H. Cameron discussed Dr. Bryce's paper, and stated as a matter of fact he had no hesitation whatever in seeing a case of small-pox himself, nor would he object to any member of his family seeing it, if he knew that they had sufficient protection through vaccination. He warned the profession against laxity in dealing with this most important subject.

Dr. Harrison, Selkirk, stated that he had had considerable experience with small-pox, and on account of that experience he entered a vigorous protest against the prevailing carelessness in the insisting of vaccination and re-vaccination in the laity as well as the profession, and that in many cases he had failed to secure successful vaccination.

Dr. Geikie considered that Jenner's discovery was one of the greatest and grandest achievements in medicine.

Dr. Price Brown referred to a case in the Toronto General Hospital in the year 1866.

Dr. Rudolf asked Dr. Bryce whether the instructions given along with lymph supplied by different firms were not partially to blame for the insufficient vaccination among the profession. He considered that no one should be guided by those instructions.

Dr. Bryce, in reply, thanked Mr. Cameron for taking up the discussion. He considered that the profession was lamentably ignorant of the nature of protection and protective qualities of vaccination itself.

Dr. D. J. Gibb-Wishart suggested that a resolution be passed by the Association expressing its approval of from three to five insertions, and advising manufacturers interested in the matter.

Dr. Thistle thought that they should not stipulate the number of marks, that it would not be wise, as many successful vaccinations had been obtained from one mark.

Dr. Stewart, of the Ontario Vaccine Farm, Palmerston, thought four or five marks better, so situated that there should be no coalescence.

Dr. McPhedran did not wonder that the younger members of the profession were weak as regards the diagnosis of small-pox,

when facilities for instruction in clinical work were absolutely nil. He had repeatedly asked to be permitted to take a class to the infectious diseases hospital, but had always been denied.

Dr. Noble, Philadelphia, thought as a surgeon that something else might have been said about the care of the vaccination wounds. The wounds should be protected so that there would be no chance of infection.

Discussion on Empyema: Medical Aspect.—This subject was introduced in a well-prepared paper by Dr. Ferguson, London, who said that the treatment of this condition was essentially surgical, and that the medical aspects of the disease were limited to a consideration of its pathogenesis and prophylaxis. He considered that the conditions of non-purulent or primary effusion were indispensable to an understanding of the pathogenesis of empyema. He gave a description of the pleura, and discussed the bacteriological aspect of purulent pleurisy, which he divided into four classes: First, those due to pneumococci; second, those due to streptococci (and staphylococci); third, those due to the bacilli of tuberculosis, and fourth, those caused by saprogenic organisms. In nine cases, extending over eleven years in his practice, three were diagnosed tubercular, three meta-pneumonic, two due to the streptococci, and one undetermined. The prognosis varies with the micro-organism present, the pneumococci being the most benign. It is the only variety of purulent empyema that may possibly yield to treatment by mere aspiration, especially in children. Tubercular empyema is usually mixed infection. The prognosis here will depend upon the general condition of the patient, and the character of the mixed infection. We therefore see the importance of a bacteriological examination, as in any other debilitating disease; supporting and tonic treatment is essential. With the advent of pus surgical means must be adopted.

Surgical Aspect.—Introduced by Dr. J. L. Turnbull, Goderich. When the presence of pus is determined, it should be evacuated at once, as there is always the danger of the abscess bursting into or through the chest wall, or even through the diaphragm, and producing peritonitis. Aspiration need not be described; remember not to remove the fluid too rapidly. In this, as in an ordinary abscess, it is not necessary to open at the most dependent point. The preferable way, and the one which Dr. Turnbull always uses when a diagnosis of pus is made, is to remove a portion of a rib; an inch and a half may be cut out, preferably with the saw, under strict antiseptic precaution. Dr. Turnbull advises washing out every day when pus is offensive, and drainage tube gradually shortened until it can be removed altogether. Where a cavity and sinus remains after this operation, the sinus may become closed, and a second empyema established. This requires an Estlander's operation, and one of the best ways is to carefully locate size and

boundaries of cavity with a probe, and after dissecting up a flap of skin be sure to remove enough bone. The hard fibrous tissue beneath the ribs, which is always present in quantity there, must be thoroughly removed. Dr. Turnbull advises mopping out with pure carbolic acid, then with alcohol to prevent poison, and then with sterilized wire, the part being carefully dried. He puts a drainage tube in the most dependent part.

Dr. J. C. Mitchell considered that these cases should be dealt with purely on the same principles as an ordinary abscess. He has seen more cases in adults than in children. He considers that a good many of them are tubercular.

Dr. Powell took exception to Dr. Mitchell styling empyema as being only ordinary abscess. He considered that it was something more, because lung was pressing on one side of it. He exhibited an instrument which he used in the operation.

Dr. John Hunter mentioned a case where air entered the cellular tissue of the skin, and universal empyema was set up.

Dr. Primrose considered it an important point to know whether the case was one of mixed infection. He does not think that we have taken all the advantage we might do of the researches that are made in the bacteriological laboratory.

Dr. Thistle said that one point had not been referred to which he considered of first importance in successful treatment—the time at which operation should take place. That is the crucial point in procuring success in these cases. The earlier the operation is done the speedier the cure, and in many of the cases which run into chronic empyemata, this result was due to the lateness of the operation.

Dr. McKeown* said that there were three points of importance, to his mind: recognized that pus is present, that we want to get at it, and that we want to get the cavity closed up.

Dr. McPhedran considered that these cases should be diagnosed very early, and are easily treated, as a rule. One should be on his guard in a case of pneumonia when the temperature falls about the eighth day to near the normal; if it commenced to rise again it is suspicious of empyema.

Dr. Freel, Stouffville, considered that it was better to resect the rib with proper dressing and tube than to aspirate.

Dr. Rudolf: So far, it seems to be the opinion of this meeting that where pus is discovered in the pleural cavity it should be removed by operation. It appears that there is one exception to that, that is, where an empyema exists along with tuberculosis of the lungs. In this condition, where pus is found, it should not be at once removed without careful consideration.

Dr. Turnbull, in reply, considered that it was best that the rib should be removed in every case. He does not think it necessary

to wash out the cavity in every case, only where the discharge is offensive. The tube should be long enough to go into the cavity.

Dr. Ferguson, in reply: Early diagnosis, with the aid of the bacteriologist, will add much to the after treatment.

EVENING SESSION.

Open-air Treatment of Disease.—By Dr. George H. Carveth, Toronto, who described his method of treating several forms of disease: First, in the house, with wide-open windows; second, in beds on the veranda; third, in beds under tents on the lawn. At first he experienced some difficulty in getting his patients to consent to be treated in this manner, but after they had become habituated to life in the open air they returned indoors reluctantly. Some of the cases that he has treated in this way are iritis, cases of fracture, cases of the radical cure of hernia, rheumatoid arthritis, tubercular diseases of the spine, typhoid fever, and a case of hysterectomy. His address was illustrated by lantern slide projections on the canvas, which proved very interesting to the members of the Association.

Dr. P. H. Bryce spoke of the value of treating small-pox patients in tents. The tents should be double-roofed, and double-floored, and double-walled, each tent provided with a stove. The patients lived in these when the thermometer was 20 degrees below zero, being quite comfortable. Nobody died, although many were seriously sick.

Dr. Freeland, Stouffville, recited the history of the case of a clergyman, the victim of tuberculosis, who lived in his tent all winter when the thermometer was 20 degrees below zero, and the wind blowing a perfect gale, and he was very comfortable. In a few months' time he ceased sweating, and gained very rapidly in weight, to such an extent that delivering a sermon would not throw him into a perspiration, as it always did before he took up tent life on his lawn.

Dr. J. H. Elliott, Gravenhurst, saw no reason why out-door life should not be employed in the treatment of other diseases as well as tuberculosis. It is not specific, and the only reason it is used is to strengthen the organism to resist disease. It is practically returning to primitive life, and it is so comfortable and pleasant that you find it very difficult to get patients to return to the house.

Dr. John Hunter referred to the Orphans' Home, Toronto, where they keep about 200 children. These are admitted at about four years of age, and they are kept there until they are about fourteen. Their mortality in that institution is about three in one thousand. They are practically kept out of doors all the time, and comparisons between the children of the Orphans' Home

and the children of the well-to-do people of the city are greatly in the former's favor.

Dr. Webster: The trouble is not now so much to get patients to sleep out of doors as it is to get them to return to the house when they have once been out of doors.

Dr. G. S. Ryerson, speaking of his visit to South Africa, said that at Bloemfontein the typhoid fever patients did particularly well in tents. The mortality was much larger in buildings improvised and used as hospitals. He considered that it was well to have the roof of a tent of material of some dark color, such as green or brown, because the patient, lying on his back, begins to complain of the color of the roof.

On the Use of Nitrous Oxide and Ether as an Anesthetic.—This paper was prepared and read by Dr. L. Coyteux Prevost, of Ottawa, and it proved to be highly interesting, carefully prepared, and ably delivered. He considers that a good and satisfactory anesthetic must possess the following qualities: First, offer the least possible danger for the patient; second, be rapid; third, complete; fourth, permanent; fifth, followed by as few disagreeable post-operative effects as possible. He then proceeded to relate the results of his personal experience during the last two years at the Hospital in Ottawa, as well as in his private practice. Dr. Gorrell, of Ottawa, was his assistant in this work. The agent they employ is ether, which they lately have associated with nitrous oxide, which is given at the beginning of anesthesia by the means of Clover's inhaler. He considers this method as absolutely ideal, as much for the rapidity with which the patient becomes anesthetized as for the freedom from all unpleasant sensations during the process of anesthesia and the diminution of after symptoms so frequent after operations. The apparatus which they have been using for the nitrous oxide and ether is Hewitt's inhaler, which is a modification of a Clover inhaler, with the rubber bag replaced by a large bag with valvular attachments. Within the last two years they have used this method almost exclusively, and the results are as follows: Anesthesia in one minute, twenty-four times out of 307 cases recorded; in one and a half minutes, fifty-five times; in two minutes, ninety-four times; in two and a half minutes, forty-seven times; in three minutes, forty-four times; in three and a half minutes, nine times; in four minutes, nineteen times; in five minutes, fourteen times. Dr. Prevost then entered into his observations with regard to the effect of the anesthetics upon the kidneys, and stated that out of 434 observations albumen was found twenty-six times. He drew attention to the fact that post-operative vomiting was very rare. Dr. Prevost was the first surgeon in Canada to employ intra-spinal cocainization. He believes that so long as the old and well-tried anesthetic agents, handled by competent men, continue to give good satisfaction,

that it will not be wise to abandon them until medullary narcosis has been clearly demonstrated. Our readers will find Dr. Prevost's paper in full under our Original Contributions in this issue.

The Complications and Degenerations of Fibroid Tumors of the Uterus, with Reference to the Treatment of these Growths.—Dr. Charles T. Noble, Philadelphia, delivered an able and exhaustive paper under the above heading, an abstract of which will be published in a subsequent issue.

Drs. J. F. W. Ross, N. A. Powell, McKinnon, and Clouse discussed the paper, to which Dr. Noble replied.

SECOND DAY—MORNING SESSION.

The Relation of Nasal Obstructions to Obscure Cases of Asthma.—By Dr. Arthur W. Mayburry, Toronto. This paper was read by title. Patients suffering from nasal obstruction are frequently coming before the notice of the busy practitioner. Asthma has a complex etiology, and the close association of this disease with nasal trouble is sometimes very remarkable. Adenoid growths in the pharynx frequently cause asthma, and in recent years much stress has been laid on the nasal origin of this disease. The author quoted Bosworth, who goes so far as to assert that asthma in a large proportion of cases is attributed to some form of nasal obstruction, the bronchial spasm being caused through reflex sympathy conducted along the fifth nerve.

On the Importance of an Early Recognition of Locomotor Ataxia—Do the Eye Symptoms Assist Us?—Dr. J. T. Duncan, Toronto, read this paper, and emphasized the importance of being able to diagnose this disease in order that prompt treatment might be applied. To do this we must be able to recognize the pre-ataxic stage. What are these symptoms? Professor Osler gives them as pains, ocular symptoms, and loss of the knee-jerk. What are the ocular symptoms? Strabismus or squint, ptosis, or drooping of the eye-lid, the fixed pupil (the Argyll-Robertson pupil), inequality of the pupils, and optic atrophy.

Notes on the Use of Adrenalin.—By D. J. Gibb-Wishart, Toronto. This is the formula which Dr. Wishart has been using in his office practice; having made several hundred applications, chiefly to the mucous membrane of the nose: One in 1,000, the chloride being dissolved in normal salt solution containing 0.5 per cent. chloretone. A ten per cent. solution of the above solution, which is equivalent to one in 10,000, has been sufficient to contract the blood-vessels in the membranes in a few seconds, and the repetition of the same or the use of a stronger dilution will blanch these membranes. Especially is this seen to be marked in the nose, where the membranes will become tightly drawn over the turbinated bones, which show

up white through it. It has proven itself to be highly useful in rendering operations about the nose practically bloodless, it is not found to answer so well in the removal of adenoids or enlarged tonsils. Dr. Wishart mentioned two cases in particular where it acted very promptly. The bottle in which it is kept must be tightly corked; and the properties of the substance are not destroyed by heat. Since he has added chloretone he was perfectly satisfied as to the stability of the preparation for all practical purposes. In no instance has there been a tendency to increase in the amount of bleeding. Dr. Wishart considers that the drug is a valuable addition to our armamentarium.

Dr. Duncan's paper was discussed by Dr. Wishart, Dr. Trow, and Dr. Hunter, while Dr. Wishart's paper brought out a discussion from Dr. Trow, Dr. McPhedran, and Dr. Graham Chambers. Dr. Wishart and Dr. Duncan replied respectively.

Discussion on Gastric Ulcer: Medical Aspect.—This was introduced by Dr. R. D. Rudolf, Toronto. In opening the discussion, from a medical point of view, he gave a short historical sketch of the chief literature of the subject, and said during the last thirty years only one important symptom had been added to those mentioned by previous writers, viz., the very common occurrence of hyperchlorhydria. Avoiding the consideration of the well-known points on the subject, he propounded five questions in connection with gastric ulcer, which seemed to him to specially merit discussion. First, is there any relation between gastric ulcer and cancer? Trosseau believed that an actual antagonism existed between the two conditions, while Labert considered that nine per cent. of all gastric cancers so arose, and Rosenheim states that five or six per cent. of all gastric ulcers became carcinomatous. Clinically, the speaker had never seen a case of simple ulcer end in cancer, nor had he seen a case of cancer preceded by ulcer, though such cases undoubtedly occasionally occurred. Dr. Rudolf had seen pathological specimens that illustrated both. Second, can we diagnose the site of gastric ulcer? This question is becoming more important on account of operations. Ewald states that in 90 per cent. of cases it is impossible to tell whether the ulcer is in the stomach or duodenum, and that usually it is hard to diagnose the site in the stomach. Most gastric ulcers occur on the posterior wall, near the pyloric end. The site of the pain and tenderness, the time the pain occurs after food, the position in which the patient is freest from pain, and the presence or absence of gastric dilatation may help, but these are very uncertain facts to lean upon. Thus in Pinel's famous case, mentioned by Abercrombie, where the patient was *known* to have ulcers near the pylorus, and the pain used to occur *immediately* after taking food. The taking of food may not only mechanically irritate the ulcer, but by stimulating the acid secretion peri-

stalsis may cause pain without touching the ulcer. It must further be remembered that there are sometimes several ulcers present. Third question: Does ergot ever stop gastric hemorrhage? Most authorities recommend ergot without question, but we must remember that the hemorrhage tends to be self-limiting from the lowering of the blood pressure, and the forming of a clot, and ergot may interfere with this natural cure by raising the blood pressure. Turpentine and other local aseptics have no such objection, and calcium chloride increases the tendency to clotting. Fourth question: Are cases of apparently "cured" gastric ulcer "first class lives" for insurance? The speaker did not think that they were, because sudden perforation might occur after years of quiescence (he had seen two such cases). Ulcers were apt to relapse or to break out in new places. The severer the symptoms of ulcer had been at the time, especially the hemorrhage, and the shorter the period since its occurrence, the worse the "life" was. Fifth question: As regards operation, as soon as perforation into the peritoneal cavity be diagnosed, operation should be at once performed. As regards operation where no perforation exists, the question was not so easily settled. Severe, uncontrollable hemorrhage might occasionally call for surgical treatment, but the mortality from hemorrhage is surprisingly small, even if this is severe. Dr. Mayo Robson had recently recommended that "after a second bleeding, even during a course of the hemorrhage, if the patient can stand it, or as soon after as his condition will admit, the operation should be done." The speaker was glad to see that his old teacher, Dr. Byron Bramwell, challenged this advice (*The Lancet*, March 9th, 1900, p. 687). Operation for the less urgent symptoms of gastric ulcer would occasionally be necessary, but in this direction we should proceed with great caution. Dr. Moylihan, in a recent paper (*The Lancet*, April 27th, 1901) gave a summary of all the cases to date in which gastro-plasty or gastro-gastrostomy has been performed for "hour-glass stomach." They amounted to thirty-eight in all, and 9 of them were fatal, while in many complete relief of symptoms occurred.

Pathology.—This branch of the discussion was led by Dr. H. B. Anderson, Toronto. He said he would make no reference to ulceration resulting from the breaking down of tubercular foci, syphilitic gummata, or malignant growths, nor of ulceration occurring during the course of acute infective diseases, nor resulting from the action of corrosive poisons, but would limit the discussion to a consideration of the commonly designated, simple, round, perforating or peptic ulcer. From the similarity in all essential points, however, he included the corresponding ulcer at the lower end of the esophagus, and in the first part of the duodenum. From *post-mortem* statistics the frequency of gastric

ulcer was in about five per cent. of cases, cicatrices being found about three times as often as healed ulcers. From his own experience at autopsies in Toronto, he was sure that gastric ulcer did not occur in Ontario as frequently as indicated by the above figure.

The condition occurred most frequently in adults from 20 to 40 years of age, but was by no means rare at the extremes of life. The mortality was greater from 40 to 60 years of age, no doubt from the lessened reparative power at that period of life. Females were affected more frequently than males, in about the proportion of two to one.

The etiological import of other diseases, especially chlorosis, was dwelt upon. Injury was a factor in rare instances, a statement substantiated by certain experimental data. Occupation, race, climate, habits, all had an indirect influence in some cases, and arterial sclerosis, thrombosis, and embolism of the gastric vessels were occasional factors in the etiology of the condition.

All these factors were, however, of secondary importance, and were only active in the presence of an altered condition of the gastric secretion. The localities where this form of ulceration occurred—at the lower end of the esophagus, in the stomach, and the first part of the duodenum—situations exposed to the action of the gastric juice, as well as the not infrequent occurrence of *post-mortem* digestion of the walls of the stomach—were strongly suggestive of the importance of this factor, and this had received further direct proof from the discovery of the frequent occurrence of a hyperchlorhydria, associated with gastric ulcer from a chemical analysis of the stomach contents, obtained after test meals. The failure to find this condition in some cases was not proof that it had not existed at an earlier period in the diseases, for the hyperchlorhydria might afterwards have been lessened as the result of the greater or less degree of gastritis following in the wake of the ulcer. Ulceration did not occur unless there was a disproportion between the acidity of the gastric juice and the condition of the blood. Normally, auto-digestion of the walls of the stomach was prevented, not by a simple chemical reaction in which the acid was neutralized by the alkalinity of the blood and fluids in the tissues, but by the vital resistance of the living cells of the part. He did not think there was anything to uphold the bacterial origin of this form of ulcer urged by some authors.

The pathological anatomy of gastric ulcer and its various terminations were discussed and illustrated by specimens. Healing was the fortunate result in the majority of cases. At other times a fistulous communication was formed with the duodenum, colon, or the cutaneous surface, or a subphrenic abscess might result. Adhesion to the pancreas, liver, or to the omentum, frequently walled the trouble off. Not infrequently, however, peritoneal in-

fection from perforation occurred, and the symptoms might be so intense as to stimulate irritant poisoning. Gastrectasia, or hour-glass deformity, from cicatricial contraction at the pyloric orifice or in the centre of the organ, at times gave rise to serious results. A specimen, showing the development of a carcinoma at the base of an ulcer with a clinical history extending over many years, was presented.

Surgical Aspect.—Dr. Henry Howitt, Guelph, conducted this part of the discussion and said: Did it never strike you as being peculiar that the best remedies, nitrate of silver and so forth, are germ destroyers? He first took up the procedures for dealing with the ulcer or its results, in which perforation is not a factor. In all the operative procedures it was essential to prevent infection of the wound; stomach should be thoroughly washed with aseptic water, by means of siphon tube, immediately before the anesthetic is administered. It is not necessary to make the abdominal incision extensive; the length of the incision would depend upon the amount of contraction, and it is sutured in such a manner that when closed the line of union is at right angles to the original incision. This gives excellent results when properly done. Adhesions render this ideal operation impracticable. The first successful operation in Canada was performed in Toronto, 1894, by Dr. Atherton. Up to last September, in the neighborhood of 300 operations were reported, with a mortality of a little over 45 per cent. Dr. Howitt then referred to cases in his own practice. With regard to the treatment, Dr. Howitt said that as soon as we are satisfied that perforation has taken place, referring to acute cases, he believes it is good practice to give morphia hypodermically; and it further lessens the amount of the anesthetic in the opinion of many. Success largely depends on the shortness of time before operation; delay is dangerous. It is Dr. Howitt's practice to eviscerate the bowels; one or more small incisions in the prominent coils soon overcome the distension, and each one is closed before another is made. Attention is now turned to the stomach, and the part brought into the wound. The ulcer is incised and opening closed with two or three layers of sutures. When the trouble is in the posterior wall it may be impossible to excise it, in which case it can be generally inverted and closed by layers of sutures. The abdominal cavity should be thoroughly flushed with a stream of saline solution. When drainage is necessary the tubes or gauze should not be introduced through a large wound. The object should be to have primary union to take place in the incision.

Dr. McPhedran, referring to the treatment of simple ulcer, said that the treatment for this is one that is not carried out very effectively. If not successful after a month of rest in bed with medicinal treatment, he would advise operation.

Dr. J. F. W. Ross referred to a case of catarrh of the stomach in a woman of 59 pounds, and where he was satisfied before operation that he had to deal with a cancer of the stomach. She recovered and rapidly gained in weight until she reached 140 pounds.

Dr. Bruce referred to a case upon which he had operated.

Drs. Rudolf, Anderson, and Howitt replied.

Vaginal Section, Exploratory and Operative.—Dr. T. Shaw Webster read a paper with the above title, describing several operations performed in that way, one being for ectopic gestation. He reported good success in them from the vaginal route.

Dr. Noble thought the vaginal route all right for abscesses, but had a preference for the abdominal in pelvic operations.

Drs. Bruce, Macdonald, Oldright, Ferguson (London), W. J. Wilson, and Clouse discussed this paper, the discussion proving an interesting one, although the members were rather impatient for hot soup, it being past the hour for luncheon.

Dr. Webster replied, and defended his position ably.

Dr. Bruce L. Riordan now passed through the theatre announcing that luncheon was ready in the dining car, so there was an immediate bolt for the door, and all were soon enjoying themselves at a very fine spread provided by the Committee of Arrangements. Afterwards, bright and happy speeches were made by several of the members, the audience simply calling for their favorites, and no one being specially set down for any toasts. Amongst others who said some good things were Drs. Harrison, Dean Geikie, J. C. Mitchell, N. A. Powell, George Bingham, and the President.

SECOND DAY—AFTERNOON SESSION.

The Roentgen Rays in the Diagnosis of Urinary and Biliary Calculi.—This paper, X-ray photos and specimens of calculi, which proved a very interesting demonstration, was presented by Dr. S. Cummings, of Hamilton.

Dr. McGillivray, Toronto, asked if the diagnosis is always positive.

Dr. Cummings replied that, if any errors, they are due to operator, not to X-ray itself.

There was a demonstration of skiagrams in an adjoining room.

On the Relation of Hyperacidity of the Stomach to Bilious Attacks, Some Forms of Eczema, Muscular Rheumatism, and Gout.—Dr. Graham Chambers, Toronto, stated that on several occasions he had examined the gastric contents of patients of apparently normal digestion, and found hydrochloric-superacidity, although in some of them there was a history of "bilious attacks," which were probably attacks of hyperacidity. He considers that

the gastric distress which is present in these cases is more or less due to the hyperesthesia of the mucous membrane of the stomach, as well as to the excessive acid contents. The commingling of these two neuroses, hyperchlorhydria and hyperesthesia gastrica, makes an investigation into the relations of the former to "bilious attacks," eczema, muscular rheumatism, and gout a very definite one, but he cannot but think that a general irritable condition of the gastric nerves must produce some changes in the sympathetic and cerebro-spinal centres, which will no doubt lead, or tend to lead, to diseases in other organs.

Dr. Chambers' attention was first called to this subject about two years ago, when he observed that the internal treatment, both dietetic and medicinal, which he was accustomed to give in cases of hyperchlorhydria, was approximately the same as that which he was using in some forms of acute eczema, and in both cases it gave very satisfactory results. In his experience "bilious attacks" are very frequent in cases of chronic hyperchlorhydria; he has also found that symptoms of indigestion are of frequent occurrence in eczema, and are usually of a character which indicates hyperchlorhydria. He has examined the gastric contents of six cases of eczema, with symptoms of dyspepsia, and in five of these there was an excess of HCl in the gastric contents. He gave notes of cases in illustration of his researches. "Acidity" is a common symptom in gouty subjects, and Dr. Chambers believes that a thorough investigation of the subject would prove the opinion that the "acidity" of the gastric contents is not due to organic acid at all, but that hydrochloric acid will be found to play an important part in it. With regard to muscular rheumatism, we know very little about the *étiology* of it. Clinically, we have found that muscular rheumatism and gout are in some way related, and in regard to relations of hyperchlorhydria and muscular rheumatism, Dr. Chambers has observed that they are frequently associated, but whether the muscular rheumatism is the result of the hyperchlorhydria, he is at the present time unable to say.

Dr. Bryce discussed the paper.

Medical Treatment of Surgical Tuberculosis.—By Dr. W. B. Thistle, Toronto. It is important to remember this fact, that there is no difference in the nature of the disease, whether considered surgically or medically, and especially is this so when we come to consider treatment. We hear on all sides that it is a curable disease, and complete cure often now happily results from medical treatment. Dr. Thistle has observed that tubercular cases requiring surgical treatment in the great majority receive little or no medical treatment. The subjects of surgical tuberculosis should have the fullest advantage of sunshine and fresh air, as well as those suffering from the disease in its medical aspect.

Treatment of Post-Operative Peritonitis.—By Walter McKeown, Toronto. The paper suggested that this condition should be treated by the use of decinormal salt solution, either subcutaneously or intravenously, and enemata of strong solutions of sulphate of magnesia. The toxins will dialyze; the antitoxins will not. If, then, the toxins can be eliminated with sufficient rapidity, the disease will limit itself as a result of the formation of antitoxin, together with the plugging of the peritoneal lymphatics. The blood is diluted by the addition of the salt solution, and this is drawn out into the rectum by means of a solution of higher osmotic pressure, carrying the toxins with it. He claims that, even with a condition of paralysis of the bowel, toxins will dialyze in this way. He suggests that if a patient were placed in a salt bath, the toxins would probably osmose directly through the skin. That osmosis does not take place from without through the skin does not prove that the reverse process will not occur. Osmosis is known to take place much more rapidly in one direction through the shell membrane of the egg than the other.

SECOND DAY—EVENING SESSION.

Dr. R. A. Pyne, the first Vice-President, occupied the chair.

The Committee on Credentials recommended the following for membership, which was adopted: Dr. R. W. Garrett, Kinsston; George Sherk, Cheapside; W. A. Scott, Courtright; Daniel Buchanan, Galt; L. C. Prevost, Ottawa; Milton Baker, Springfield; Donald McGillivray, Toronto; A. E. MacColl, Belleville; Arthur I. Brown, Holstein.

The following constituted the Nominating Committee: Drs. George A. Bingham, A. McPhedran, Burt, of Paris, Powell, of Toronto, Mitchell, of Enniskillen, Harrison, of Selkirk, and MacDonald, of Toronto; Drs. E. Clouse and Price Brown acting as scrutineers.

This Committee reported as follows, which on motion, was received and adopted:

President, Dr. N. A. Powell, Toronto; First Vice-President, Dr. R. Ferguson, London; second Vice-President, Dr. R. W. Garrett, Kingston; Third Vice-President, L. C. Prevost, Ottawa; Fourth Vice-President, R. L. Turnbull, Goderich; General Secretary, Harold C. Parsons, Toronto; Assistant, Dr. George Elliott, Toronto; Treasurer, Dr. A. R. Gordon, Toronto.

The report of the Committee on Public Health was presented by Dr. Rosebrugh, seconded by Dr. Wm. Oldright, and adopted.

That on tuberculosis, by Dr. W. B. Geikie, seconded by Dr. H. J. Hamilton, and adopted.

That on Hospital Abuse was presented by Dr. Webster in the

absence of the chairman, Dr. W. J. Wilson, seconded by Dr. W. A. Young, and adopted.

The Committee on Inter-Provincial Registration had nothing at the present time to report.

Treasurer's Report was presented by Dr. G. H. Carveth, and showed last year's receipts to have been \$370.30, and expenditure, \$334.66, leaving a balance of cash in bank of \$35.64. This was audited by Dr. R. D. Rudolf, and on motion adopted.

The Report on Neerology was presented by Dr. Geo. Bingham. It included the names of C. W. Covernton, Toronto; C. E. Martin, Toronto; J. D. Macdonald, a past president, Hamilton; J. E.



DR. N. A. POWELL.

Newly Elected President of the Ontario Medical Association.

Eakins, Belleville; Isaac Ryall, Hamilton; A. K. Sturgeon, Petrolia; Dixon, Pembroke; Mennie, Toronto; J. A. Watson, Toronto; T. H. Little, Toronto; Jonathan Robinson, Toronto; J. H. Parsons, Toronto; and Irving, St. Mary's.

The Ontario Medical Library was voted \$50 on motion by Dr. R. A. Reeve, seconded by Dr. H. T. Machell.

A notice of motion was given by Dr. Graham Chambers, and seconded by Dr. H. B. Anderson, that the business session at future meetings be held on the evening of the first day. This will be referred to the Committee on By-laws.

Resolution of regret *re* non-payment of the annual \$2.00 fee

of the Ontario Medical Council was introduced by Dr. Ferguson, of London, seconded by Dr. Gibson, of Belleville, that some members of the profession in Ontario had failed to pay their annual assessments, and that this Association regards the imposition of this fee as most reasonable, payment of which should meet with a cheerful response on the part of every member of the profession. This was carried unanimously, amid much applause, and without a dissenting voice.

Dr. Wishart, Toronto, chairman of the Special Committee to draw up a resolution *re* vaccination, reported:

Resolved,—That the Ontario Medical Association desires hereby to re-assert the opinion of the medical profession of this Province:

1. That the principles of Jennerian vaccination against small-pox, which have now been attested by the experience of over a century, are scientifically correct.

2. That in order to carry out the protection through vaccination against small-pox, it is necessary that the lymph used in the operation be of normal quality, and that this can be shown only by a proper amount of systemic reaction to the vaccine as determined by the character of the vesicles, and that the absence of a normal reaction as shown by the presence of vesicles is no positive evidence of the immunity of the person either against vaccinia or small-pox.

3. That this Association emphasizes the urgent necessity that the scarification of the skin be sufficiently extensive to secure such reaction, and to this end recommend that from three to five insertions, each of a quarter of an inch square, be made in each vaccination. This was carried.

Medical Defence Union.—On motion of Dr. J. F. W. Ross, seconded by Dr. A. Primrose, a committee was appointed to inquire into this matter, to report at the next meeting of the Association in 1902.

Votes of thanks were passed to the Minister of Education for the use of the building, and also to the President, Dr. McKinnon, for his exceedingly able address.

During the progress of the meeting, it was addressed by the Hon. the Minister of Education, Mr. Harecourt, who advised them strongly to keep up the standards of matriculation and the professional examinations.

Dr. N. A. Powell was then installed in the office of president, and after brief acknowledgment the 1901 meeting adjourned.

EXHIBITS OF DRUGS, SURGICAL APPLIANCES, ETC.

The New York Pharmacal Association—Arlington Chemical Company—Palisade Manufacturing Company. Canada Office, 88 Wellington Street West, Toronto.

Exhibit of these companies proved a centre of much interest, demonstrating the high esteem in which their products are held by the profession. The New York Pharmacal Association showed the various preparations of "Lactopeptine," which have made the Company's name a household word in the medical world on both sides of the Atlantic. Pioneers in the field of digestives, "Lactopeptine" still heads the procession as the digestive *par excellence*.

The Arlington Chemical Company showed their "Liquid Peptonoids," which have established themselves as a most effective and reliable nutrient, where ordinary food cannot be taken. Particular attention was directed by representatives to the combination with "creasote," to the value of which in typhoid, tuberculosis, and gastric intestinal disorders we gladly bear testimony. This Company also exhibited their new preparation, "Phosphagon," a combination of phosphorus and the organic phosphorized compound. Composition of this "natural nerve material" is fully set forth in a most interesting treatise issued by the Company, which they will cheerfully send to all applicants for same.

"Hemaboloids," "Hemaboloids Arseniated," "Hemaboloid Tablets," and "Borolyptol" constituted exhibit of the Palisade Manufacturing Company. The first-named preparation and its recently added "arseniated" combination are rapidly growing in favor with the profession in Canada as a valuable agent in treatment of chlorosis, etc. This preparation is described as "a combination of the various iron-bearing nucleo-albumins of the vegetable kingdom, reinforced by bone-marrow extract and beef peptones, antiseptically treated with nuclein." Remarkable and overwhelming testimony is offered as to practical clinical results obtained in its use, and we would advise our confreres to take advantage of the extremely liberal offer of the Palisade Manufacturing Company to furnish samples, as well as copy of booklet, "Concerning Hemaboloids," to any physician in regular practice who may desire them. "Borolyptol" is too well known to the profession to call forth extended mention, and we are glad to learn that its merits are becoming fully appreciated on this side.

Exhibit was in charge of Dr. W. B. Nichols and Mr. L. G. Christie, the latter a veteran and acceptable missionary to the service in this field. Dr. Nichols made his bow to the Canadian profession on this occasion, and demonstrated his thorough fitness for the important work entrusted to him, viz., waiting upon the

profession generally in the interest of the preparations of the three companies above named.

H. K. Wampole & Co., Philadelphia and Toronto.

Another of the features of the exhibit of the Ontario Medical Association was the very elaborate display made by Messrs. Henry K. Wampole & Co., whose Canadian Laboratory is at Nos. 36, 38, and 40 Lombard Street, Toronto. While it would be impracticable to mention in detail each of the special and pharmaceutical preparations which this popular firm displayed at this meeting, yet there are several newer preparations whose salient points are of such value to the medical profession that we deem it advisable to further direct their attention to them. Probably the most important among these is Wampole's Milk Food, which by chemical analysis is shown to simulate more accurately and uniformly human milk than any other similar food. Briefly stated, chemically it is simply pure milk, largely deprived of its casein, partially predigested by the diastase of the malt, and its nutritive principles enhanced by the beef, and the extra percentage of soluble phosphates obtained from the inner cortical of the whole wheat grain. Practically, in preparing Wampole's Milk Food, the mother or nurse avoids all the disagreeable manipulations necessary when cream or milk is added, avoiding expense of same, as well as that for ice, and the complex apparatus needed in sterilizing, etc. The reports received from the medical profession bearing upon this food are of a most gratifying nature, and, we think, of such a character as to warrant, at least, a thorough trial.

Antiseptic Vaginal Cones of Boroglyceride Compound with Ichthyol are most appropriate for those diseases in which their use is indicated, offering an acceptable method for the treatment of vaginal ailments without inconvenience, pain or discomfort, and without necessary exposure, unavoidable in introduction of tampon or other local applications; giving prolonged contact of very efficient antiseptic and mild astringents, besides the medicinal activity of the Ichthyol.

The other specialties of Messrs. Wampole & Co., as exhibited, are well known by the profession in Canada, and we bespeak for them consideration.

The Chandler & Massey, Limited, Toronto.

Chandler & Massey, Limited, made a splendid display of a number of their lines. Their exhibit of ligatures, etc., attracted a great deal of attention, as did also their bedside tables and ward tables, special mention being made of the high-grade quality of the goods being turned out of their manufacturing departments. One of the most interesting features, however, of their exhibit, and which seemed to gain the attention of the physicians in attend-

ance, was the adjustable Fox Invalid Bed. Chandler & Massey have just recently acquired the patents in connection with this bed, and report that sales are being made as rapidly as the beds can be turned out of their machine shop.

A great many of the visitors could not resist the attractions of the very fine display of books, which is the latest department added to the Chandler business, and Mr. Watts, who had the exhibit in charge, reports a large number of sales of medical books. Their book-table certainly showed a good assortment of up-to-date medical literature, and a nice line of books for which Chandler & Massey are special Canadian agents.

Parke, Davis & Co., Walkerville.

A most attractive exhibit, which drew the attention of all of the physicians as they came in at the main door, was that of Parke, Davis & Co., of Detroit and Walkerville. It consisted of their different biological preparations, their anti-diphtheritic, anti-streptococcic, anti-tetanic, and other serums in different sized vials and of varied dosage. The firm also exhibited a full line of vaccine tubes and ivory points. The exhibit was in charge of Mr. Grant, who was courtesy personified, and assisted in no small manner in adding to the enjoyment of the visitors.

Frederick Stearns & Co.

The exhibit of Biologic Products and Specialties from the laboratories of Frederick Stearns & Co. received much attention from members of the Association present. Their package of *Special Concentrated Diphtheria Antitoxin*, combining with each bulb a complete syringe for injection, was especially favorably commented upon.

Messrs. Stearns & Co. have recently erected a large addition to their laboratories for the Biologic Department, which is now one of the most modern and completely equipped in the world. Their exhibit of Pharmaceutical Specialties included Kasagra, which is recognized by the profession as the ideal tonic laxative. Stearns' Wine of Cod-Liver Oil, Liquid Hæmoferrum and Triptalm, also the newer specialty, *Vibutero*, a concentrated and exceedingly palatable preparation of the two viburnums, in combination with saw palmetto, and other uterine tonics and sedatives. Stearns & Co. invite correspondence with physicians, and their scientific department is at the command of the profession at all times.

J. H. Hartz & Co., of Detroit and Toronto.

J. H. Hartz & Co., of Detroit and Toronto, had an exhibit which, judging from the crowd of physicians constantly around it, proved attractive. Besides his other goods, Mr. Hartz, who

was there himself, erected a large static machine, and demonstrated its value as a cathode ray generator.

Tropon Preparations.

Hupfeld, Ludecking & Co., of Montreal, was represented in the interests of Tropon in its different forms—Tropon and Iron, Tropon Chocolate, and Tropon Cocoa. This preparation is one which is rapidly surging its way to the front, and deservedly so, as it proves frequently of considerable value in the treatment of cases of marasmus in children, and anemia, anorexia, and similar conditions in the adult.

J. A. Carveth & Co., Toronto.

J. A. Carveth & Co. had a table on the left of the main entrance, and showed a full line of W. B. Saunders & Co.'s medical books. This exhibit was in charge of Mr. Carveth himself.

ANNUAL MEETING OF THE COLLEGE OF PHYSICIANS AND SURGEONS OF ONTARIO.

(Digest.)

OUR local medical legislature met in their council chamber, Tuesday, June 11, with Dr. Britton, President, in the chair. Dr. Britton, in opening his annual address, referred to the deaths of Dr. W. W. Dickson, Vice-President of the Council, Dr. Carlyle, Auditor, and Mr. B. B. Osler, Solicitor of the Council. He dealt with the question of the annual fee and the method of its collection, referring to recalcitrant members (280 in number), who still refuse to pay. In speaking of Dr. Roddick's scheme of Dominion registration, Dr. Britton said: "It is my strong conviction that representation by population, so modified as not to render the Dominion Council unwieldy or financially impossible, must be conceded before Ontario could, in justice to herself, take the first step towards unifying the profession throughout Canada."

On Wednesday the committee on examinations reported that owing to the large number of candidates presenting themselves for examination this year, it would not be possible to make the results known until July 22. As the Council has to pass these results, a difficulty presented itself, and the committee suggested that it be left to the executive committee to disclose the results, and deal with any complaints that might arise, a special meeting of the Council being called if necessary.

The application of Dr. Jordan, a soldier who served in South Africa, for registration, was referred to the committee on registration by the examination committee. The property committee reported that the building is in good condition, and that the Canada Life Assurance Company had agreed to re-

duce the interest on the mortgage to 3 1-2 per cent. on \$60,000, if the Council could not sell the building at a fair price, the Council to keep the building insured for \$25,000 for the benefit of the mortgagees. A letter was attached from an architect, recommending that by adding two floors of offices under a flat roof it would be possible to make the building a paying concern. Every effort had been made to dispose of the property. None of the offices in the building were vacant. The committee appointed to deal with infractions of the Medical Act reported that a number of cases were considered and investigated, and in some cases prosecutions were made. An opinion was appended from Mr. J. W. Curry, K.C., to the effect that under the Medical Act the registrar was in duty bound either to enforce the payment of the \$2 fee upon all practitioners or else leave it in abeyance altogether. The committee recommended that medical practitioners who were said to be shielding men in practice, who were not registered, should be brought before the discipline committee, or at least that the discipline committee should investigate these complaints.

On Thursday morning Dr. Roddick, of Montreal, addressed the Council on the subject of Dominion Registration. After dealing with the well-known features of this question, he added that at the next session of the House of Commons of Canada a committee would be appointed to hear delegates from any Province, and consider their suggestions.

A great deal of discussion took place on the case of Dr. Shepherd, who was accused of conduct infamous and disgraceful in a professional way. He was suspended by a vote of 24 to 6. Mr. Curry was present as counsel for the Council. Dr. Shepherd said he would appeal from the Council's decision.

On Friday morning the by-law providing for an imposition of a fee of \$2 a year on each member of the College was adopted.

The report of the finance committee showed that the estimated revenue for the coming year was \$25,136, and the estimated expenditure \$17,885. The salary of the treasurer, Dr. Aikins, was increased from \$400 to \$500.

Dr. Macdonald presented the report of the committee on Dominion registration. They recommended the adoption of the preamble of Dr. Roddick's bill; but suggested the following scheme of representation: The first 100, or fraction of 100, medical practitioners in each Province shall be entitled to one representative. The second 100 or fraction of 100 over 50 per cent. shall be entitled to one representative, and for each subsequent 600 one representative shall be allowed. One representative from each Province shall be appointed by the Governor-General in Council, and there shall also be three members elected by such practitioners in Canada as are now recognized by the laws of a Province as forming a particular and distinct school of the

practice of medicine, and are as such entitled to representation in the Medical Council of the Province. There shall be one representative for each university having a teaching faculty in medicine or a medical college in affiliation with it. The committee also recommended that such members of the Ontario Council as shall attend the meeting of the Canadian Medical Association at Winnipeg be a committee to confer with similar committees from other Provinces. The report was adopted.

The officers elected for the ensuing year are: President, Dr. L. Brock, Guelph; Vice-President, Dr. W. J. H. Emory, Toronto; Registrar, Dr. R. A. Pyne, Toronto; Treasurer, Dr. H. W. Aikins, Toronto; Auditor, Dr. J. C. Patton, Toronto.

At the concluding session of the Ontario Medical Council on Saturday morning, the report of the educational committee, read by Dr. W. H. Moorhouse, recommended the following board of examiners for 1901-1902, which was adopted: Dr. H. B. Anderson, Toronto, anatomy, descriptive; Dr. W. G. Anglin, Kingston, theory and practice of medicine; Dr. R. N. Horton, Brockville, midwifery, operative and other than operative, and puerperal diseases; Dr. A. Primrose, Toronto, physiology and histology; Dr. J. W. Edgar, Hamilton, surgery, operative and other than operative; Dr. W. Gunn, Clinton, medical and surgical anatomy; Dr. G. Chambers, Toronto, chemistry, theoretical, practical, and toxicology; Dr. J. W. Schooley, Welland, materia medica and pharmacy; Dr. J. H. McLellan, London, medical jurisprudence and sanitary science; Dr. R. Ferguson, London, assistant examiner to the examiner on surgery, diseases of women; Dr. A. Haig, Kingston, first assistant examiner to the examiner on medicine, diseases of children; Dr. G. H. Field, Cobourg, second assistant to the examiner on medicine, pathology, therapeutics, and bacteriology; Dr. E. T. Adams, Toronto, homeopathic examiner.

On motion of Dr. Britton, seconded by Dr. Emory, the special committee on Dominion Registration was instructed to favor the following addition to clause i, sect. 10, of Dr. Roddick's proposed Registration bill: "And provided always that the possession of a Canadian University degree alone, or a license to practise founded thereon, shall not entitle the holder to register under this Act." Dr. Britton explained that, according to Dr. Roddick's bill, the Dominion Council would have power to register anyone holding a license to practise in any Province, or holding a degree from any Canadian University. Dr. Britton's intention was that his amendment should not apply to those licensed to practise in any Province prior to the passage of Dr. Roddick's bill; but only to those presenting themselves for registration after that bill should pass.

The Council adjourned to meet again on the fourth Tuesday of June, 1902.

MEETING OF EXECUTIVE HEALTH OFFICERS OF
ONTARIO.

BRANTFORD, JUNE 25TH AND 26TH, 1901.

THE matter of time and place of the 1901 meeting of the Executive Health Officers Association of Ontario was left in the hands of the Executive Committee, who, after consultation with the local health officials of Brantford, decided to hold the session on Tuesday and Wednesday, the 25th and 26th days of June, as being a time of year when medical health officers and members of boards of health were likely to be most at liberty to attend. A strong local committee of arrangements was formed, and there was a large attendance and enthusiastic reception by the public-spirited citizens of Brantford. The Executive Committee carried out the following general programme, most of the papers read being upon those subjects:

1. *Small-pox Outbreaks in Ontario*.—(1) Types of Smallpox. (2) Difficulties of diagnosis. Degrees of protection by vaccination. (3) Methods of dealing with outbreaks in cities, towns and townships, and unorganized districts. (4) Vaccination—As a problem in serum therapy. (5) What is normal vaccination? And to what are the protective qualities of vaccine due? (6) Dangers from vaccination. How existing? How far inevitable? How avoided?

2. *The natural history of Typhoid Fever*.—(1) Typhoid outbreaks in Brantford during five years. (2) Relationships of Typhoid to ground water. (3) The spread of Typhoid through milk supplies. (4) Is the *Bacillus Coli* causative of Enteric Fever? (5) The immunity of towns when uncontaminated public waters are supplied.

3. *The regular medical inspection of school children and schools as a means of stamping out infectious disease*.—(1) Should schools be closed during an outbreak of contagious diseases?

4. *How far can the examination of swabs from diphtheritic throats be accepted as a reason for giving certificates of recovery in diphtheria?*—(1) Variations of types in Diphtheria and Scarlet Fever and the duties of physicians in the matter of duration of time before giving certificates of recovery, and in the isolation of mild cases.

5. *How are Sanatoria for Consumptives to be established and maintained?*—(1) Does the bill for county sanatoria meet local conditions? (2) Can a private company be expected to deal with the work of a whole Province or the whole Dominion? (3) How will physicians and health officers best promote public health

interests in dealing with the care and treatment of consumptives. (4) Meat production for transportation and export, and the relation of local or state inspection thereto. How can local populations be protected against poor meat, while the best quality is sold for export or to metropolitan markets?

6. *Has the Milk Inspection Act of 1900 proved adequate for prohibiting the sale of unwholesome milk and improving the quality of public supplies?*—(1) What are the important points in practice required to obtain a safe children's supply of milk? (2) How can health officers best assist in improving the milk products of dairies and creameries? (3) Can Dairymen's Associations have their products improved in wholesomeness, quality and value by systematized compulsory inspection by qualified health officers? (4) How should expenses be met in the inspection of factories where meat and dairy products for the export trade are prepared?

7. *Can rural sanitation in the matter of inspection of wells, the inspection of schools, the dealing with the outbreaks of contagious diseases, be improved by any alteration in our present health machinery?*—(1) Would the extension of the unit of local health organizations to ridings or county boundaries be conducive to greater efficiency and economy in the public health service?

8. *The progress of sewage purification works in Ontario.*—(1) Some of the practical advantages to towns in disposing of sewage on sewage farms.

Sir Frederick Treves.—Mr. Frederick Treves has had the honor of knighthood conferred upon him by the King in person, who also invested him with the insignia of a Commander of the Royal Victorian Order. Recently he was appointed Honorary Sergeant-Surgeon to the King. He was awarded C.B. for his services as Consulting Surgeon in the South African War. But entirely apart from his services in the war, Mr. Treves has earned sufficient distinction as a surgeon and surgical writer to entitle him to the highest distinctions from his sovereign. His works on "Intestinal Obstruction," "Surgical Anatomy," "Operative Surgery," and the "System of Surgery," edited by him, have long been standard books in the profession.—*Jour. Amer. Med. Association.*

A Very Serious Case.—Late one evening a doctor received a note from a couple of fellow-practitioners, saying: "Pray, step across to the club; we are one short for a rubber." "Emily, dear," he then said to his wife, "I am called away again. It appears to be a very serious case, for there are two doctors already in attendance."

Selected Articles.

SUMMER DIARRHOEAS IN CHILDREN.

BY H. S. BAKETEL, M.D., MELROSE, MASS.

To the busy practitioner the proximity of summer brings little of joy or gladness. The average man looks forward to the hot months for pleasure, rest and recreation. The average physician, however, can only anticipate hard work and plenty of it, with difficult cases, aggravated by the heat and atmospheric changes.

Probably the greatest bugbear to haunt the dreams of the medical man is intestinal disturbance. From June to late September he is greeted on all sides by summer diarrheas, many of which are of the most baffling nature.

The mortality from intestinal diseases in children is very heavy, particularly in cities and large towns. Even in the country the physician signs more death certificates from these causes than he cares to.

I have been greatly interested in the diseases of children, and have followed certain definite lines of action with a considerable amount of pleasure. The summer diarrheas of which I am about to speak were met with in a fairly extensive country practice radiating about a town of 3,500 inhabitants.

The people were prosperous mechanics, farmers and artisans, with a comfortable sprinkling of business and professional men. The town was high and sandy, well drained by natural and artificial means. The cases reported were with rare exceptions seen in good homes, clean and sanitary, so that the element of filth was quite eliminated.

A careful study of the diarrheal cases in my record book for 1899 shows that there were three well-defined classes: Catarrhal enteritis, entero-colitis, and cholera infantum, named in the order of their frequency. I also saw cases of cholera morbus in older children, but as I am speaking particularly of young children, I will omit any discussion of that form of disturbance.

Catarrhal enteritis, or the so-called acute diarrhea, was met with almost daily. The similarity between the various cases was

so marked that I kept but few records other than the diagnosis, duration, and treatment.

The characteristic feature of this complaint is a marked looseness of the bowels, accompanied by fever, pain, and localized abdominal tenderness.

Twenty-nine cases showed these general features, and were therefore treated in much the same manner. The causes were mostly indigestible food and heat changes, six being of the latter variety. When seen, these symptoms were observed: Increase in temperature, ranging from 101 to 103 degrees, two cases showing 104 degrees; colicky pain near the umbilicus, and much tenderness over that point; yellowish-green stools, showing much indigested food and little fecal consistency; anorexia and great weakness. In 21 of the cases the yellowish-green stools gave way to the characteristic "rice water" evacuations, and in nearly every instance emaciation was noted after the second day. At the outset I swept the bowels clear of mucus and fermenting food by the administration of castor oil, to which was added laudanum for the prevention of griping, and sodium bicarbonate (15 gr.) to counteract the acidity of the bowels caused by fermentation. After the intestines had been thoroughly cleansed of all irritating substances, they were given an opportunity to rest. The diet was limited to milk and lime water, to which was added later chicken soup. The following prescription was very generally used, and each time proved successful:

R	Tinct. opii deod.....	gtt. i.
	Bismuth subnit.....	gr. v.
	Mist. cretæ.....	fʒi.
	Peptenzyne.....	gtt. x. M.
Sig.	Every four hours.	

But one case became aggravated, necessitating acid treatment, and that one was not seen for three days after the onset of the disease. The average duration of the trouble was eight days. It was found exceedingly difficult to keep the patients in bed, as they ranged from two years up.

In looking at the second class, entero-colitis, of which 18 cases are noted, one is much impressed with the severity of the disease. Its causes are very like those of catarrhal enteritis, improper food and changes in atmospheric conditions, to which may be added uncleanness, impure air, and exposure to dampness. I believe improper food plays a most important part in the causation of entero-colitis. This belief was emphasized from the fact that seven cases occurred in three neighboring families who obtained their milk from a common source. It was only delivered three times a week, and although some care was taken with the milk, the severe diarrheas in the three families, who alone obtained their supply tri-weekly, leads me to suspect that the intervals between

milking and the actual consumption was so long that lactic acid fermentation had set in, thereby causing an inflammatory diarrhoea. The various cases of entero-colitis simulated each other with no great divergencies. The patients were in the period of first dentition to a large extent, 12 of the 18 cutting incisors. Two had no teeth, one was getting his anterior molars, and three possessed a full set of teeth. The symptoms of anorexia, feverishness, nausea, vomiting, with greenish, semi-fluid stools containing yellowish fecal flakes, the "mousy" smelling, "spinach-like" stools, are familiar to all practitioners. Each of the cases recovered after illnesses averaging 17 days. This was due in great measure, I believe, to insistence on proper hygienic conditions, combined with proper medication. In three cases where the drainage was not modern, the children were taken to neighboring houses, which were perfect from a sanitary standpoint. Fresh air, daily baths, and absolute rest were found to be absolutely essential in the treatment of this malady. The first few days I gave small doses of milk and peptenzyme, one tablespoonful every three hours. After the fifth day the amount of milk was increased, and the peptenzyme given in the same dose at 10 a.m. and at 2 and 7 p.m. This prescription gave the best satisfaction:

R Tinct. opii camph.....℥iii.
Tinct. catechu comp.....℥iv.
Mist. cretæ.....℥ix. M.

Sig. Teaspoonful every two hours.

The usual spice poultice on the abdomen was also found of service. My extreme good fortune in these cases was due in great measure to the excellent offices of peptenzyme.

Cholera infantum was met with 11 times, with 10 recoveries. The fatal case was not seen until the patient was *in extremis*. The symptoms are so well known that no description is necessary, and I will merely outline the plan of treatment. Immediately upon seeing the patient the colon was thoroughly washed out. Irrigation was continued every two hours until the food flakes and mucus had been thoroughly dislodged and a clear fluid shown. I then sought for the cause of the trouble—whether heat, exhaustion, thermic fever or ingestion of irritating food products, and treated the case accordingly. Food was rigidly prohibited, small doses of protonuclein being administered every two hours in bran-died water. This prescription was used:

R Acid. sulph. aromat.....gtt. xxx.
Tinct. opii camph.....℥ viii.
Sprt. chlorof.....gtt. xlviii.
Syr. zing. q. s. ad.....℥iii. M.

Sig. Teaspoonful every two hours.

Peptenzyme was freely given, often five drops every two hours, and in two severe cases the dose was doubled. Counter-irritation

over the bowels by a spice poultice was also invariably used to good advantage.

I believe the excellent success attending the cases was due in great measure to the liberal use of peptenzyme. I have found nothing which acts with such uniform success in diarrheas as this remedy. Its use is not necessarily confined to the sphere of pediatrics, as its influence is as potent among adults as among children. In previous experiences with summer complaints, in which peptenzyme was not used, the death rate was much larger, and I am convinced that its superiority over the average digestive ferments was the cause of the excellent showing made in the cases here reported.

TANNOFORM AS A PREVENTIVE OF HYPERIDROSIS AND SORE FEET.

SURGEON-MAJOR F. MERZ, in order to ascertain the comparative value of tannoform in preventing and curing excessive and fetid perspiration of the feet (hyperidrosis and bromidrosis), used it in a great number of soldiers side by side with other treatment. Each company was divided into three portions; one division was treated for three nights in succession with tannoform powder, the second division was treated with the ordinary regimental foot-powder, and the third division was made to take a cold foot-bath only. In a week the feet of all soldiers, who in the meantime had attended to their exhausting drills and marches, were inspected, and the following instructive results were noted: Of those that were treated only with the ordinary foot-bath, 68 per cent. were found to suffer with hyperidrosis of various degrees of severity; of those treated with the regimental foot-powder, 52 per cent. were so affected, while of those treated with tannoform only 20 per cent. had hyperidrosis, and not one case was of the very severe variety (where the skin between the toes becomes macerated, etc.). The tannoform, mixed with two parts of talcum, was applied by rubbing it in well between the toes and over the foot. The writer is convinced that had the tannoform been applied more than three times the results would have been still better. He agrees with Dr. Karl Ullmann that the prophylactic treatment of hyperidrosis with tannoform must extend over a period of at least eight days; but then, he says, we may be certain, that *for weeks to come* those so treated—at least the greatest majority—will not suffer with sweating of the feet. The best time to apply the tannoform is on going to bed. A preliminary foot-bath before each application is desirable, but not absolutely necessary. The bad odor of the feet disappears just as surely as the sweat itself. In not a

single instance has the doctor noticed any disagreeable by-effects of any nature, and he considers the drug absolutely innocuous. Basing himself on his highly gratifying experience, the major, in his report to the chief physician of the army, made the following recommendation: "There is no doubt that in tannoform we possess an excellent, absolutely innocuous remedy for the prevention, to a great extent, of hyperidrosis and sore feet in the army; its systematic employment will contribute materially toward the marching ability of the soldiers."

SKIN GRAFTING.

BY FRED. T. J. ADAMS, M.D., BRIDGEPORT, CONN.

THE following case of skin-grafting may prove interesting. The patient, Bessie R., aged eighteen years, while carrying a lamp upstairs, fell. The lamp ignited her clothing, and before it could be taken off the patient was severely burned on the inside of both legs and thighs. A doctor, while passing, was called in, and applied carron oil. He was subsequently discharged and another doctor called, who treated the case first with various ointments, the names of which the patient could not recall.

I was called in during the illness of the attending physician, and after consultation with him I prescribed ichthyol. The recovery was not as rapid as I considered should be the case, and on dressing the patient one morning I discovered a number of blisters on the adjacent whole skin. These I raised, and tearing off as large flakes of the epidermis as possible, grafted them onto the granulating surface of the burn. In place of the usual rubber protective I applied dolomol-aristol, ten per cent., and smoothed the powder with a bit of cotton used as a powder duster. The following day the grafts had all taken, with two exceptions, and the process was continued every day for nearly two weeks until the whole surface had been covered by the grafts. The surface covered by grafts included the whole of the inner side of both legs, including the ankles, thighs, and also the vulva. One month from the time I began to use the epidermis for grafts my patient walked about and was discharged, cured.

I found the dolomol-aristol, ten per cent., far superior to any rubber protective, as it is thoroughly antiseptic and does not produce too much heat, a point always to be careful of in doing a skin graft. Since that case I have used the preparation a number of times on similar cases, and always with uniform success.—*N. Y. Lancet*, March, 1901.

PEROXIDE OF HYDROGEN, MATERIA MEDICA AND THERAPEUTICS.

BY JOHN V. SHOEMAKER, A.M., M.D.,

Professor of Materia Medica in the Medico-Chirurgical College, of Philadelphia, Pa.

Pharmacology.—The usual strength of peroxide of hydrogen is called the fifteen volume solution, because each portion of the solution yields fifteen volumes of the oxygen. It is prepared by Charles Marchand, New York, for medical use, and is an active oxidizing and antiseptic agent. Glycozone is the trade name of a similar preparation, in which glycerine is the vehicle.

Therapy.—Though less powerful than many other antiseptics, the solution of hydrogen peroxide has a special place in surgery, gynecology, and obstetrics, on account of its powers of decomposing pus and destroying the microbes of suppuration. Being free from all irritating qualities, it can be poured over wounds, injected into sinuses or into the ear, or used as a spray in ulceration of the pharynx and of the larynx.

It produces a frothing up when it encounters pus, owing to the liberation of oxygen, and the cessation of this commotion indicates the removal of all pus. The surface of the wound or ulcer becomes blanched, but is not injured by the application.

Tubercular and mammary abscesses especially are well treated in this way. In ulcerative tonsillitis, fetid breath, and in some bronchial affections, a spray of dilute hydrogen peroxide is productive of benefit. A spray of this agent is likewise of utility in chronic nasal catarrh, ozena, and scarlatinal angina. It has been administered, well diluted, in gastric affections, and is said to be very useful in flatulent dyspepsia, heartburn, catarrh of the stomach and bowels, etc.

In diphtheria and croup its value has been established; a two volume solution is especially recommended in young children as a local application, and particularly after separation of the membranes, in order to remove the odor and disinfect the surface. Internally it is too quickly decomposed in the stomach to render much service as a source of oxygen to the blood. It might prove of value in gastric ulcer.

The Mayor of Cleveland, forgetting that mediæval times are past has promulgated a decree that, while he is mayor, there shall be no compulsory vaccination in his city.—*Jour. Amer. Medical Association.*

The Canadian Journal of Medicine and Surgery

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Doctors will confer a favor by sending news, reports and papers of interest from any section of the country. Individual experience and theories are also solicited. Contributors must kindly remember that all papers, reports, correspondence, etc., must be in our hands by the fifteenth of the month previous to publication.

Advertisements, to insure insertion in the issue of any month, should be sent not later than the tenth of the preceding month.

VOL. X.

TORONTO, JULY, 1901.

NO. 1.

Editorials.

POISONING BY STRYCHNINE.

To a practitioner who is unaware that the patient he is called to see has taken a poisonous dose of strychnine, the first intimation of the truth may be revealed by the peculiar convulsions of the patient. These sudden and universal convulsions affecting the voluntary muscles have sometimes been so violent that the patient has been jerked off his bed. In severe cases the patient may

assume the position of opisthotonos, the body curving in the form of a bow, so that he rests upon his head and his heels. During the convulsion he suffers intensely and tries to obtain relief, gasping for air. After a brief period of time, lasting from half a minute to one or two minutes, an intermission follows a convulsion, and the patient is exhausted; but his intellect is clear. He can then speak and swallow, and he complains of thirst. Naturally such an array of striking symptoms points to poisoning by strychnine. Even if tetanus were suspected, the fact that the attack had begun in full intensity with tetanic spasms in other muscles than in those of the lower jaw, and that intermissions occurred between the convulsions, would point to strychnine poisoning.

Usually the first symptoms are milder in form, and consist of restlessness and anxiety, with stiffness of the neck, twitching of the muscles, pressure in the chest, and difficulty in breathing. The tetanic symptoms produced by strychnine, when once clearly established, progress rapidly either towards death or recovery, authorities agreeing that within two hours from the beginning of the symptoms, the patient either dies or recovers, according to the severity of the paroxysms and the strength of his constitution. "Death has taken place in a patient in ten minutes from the beginning of the first paroxysm" (Taylor's "Medical Jurisprudence").

Minutes being precious in the treatment of such a case, and as a would-be suicide rarely volunteers to give information, and a would-be murderer, should such be present, never, a practitioner should, at an early stage of his career, familiarize himself with the appearances of strychnine poisoning in animals, as exhibited in dogs (*vide* Butler's "*Materia Medica*," p. 485).

Melted lard has been used with advantage in several cases of strychnine poisoning, a favorable reference to this agent appearing in the "National Dispensatory." Lard acts as a mechanical absorbent of strychnine in the stomach, thus preventing its effect on the nerve centres, and keeping it in a harmless form until it can be removed by an emetic. Sweet oil and milk have been used with apparent success and also operate in a mechanical way. Animal charcoal and tannin have also been used for the same purpose, but tannin has the additional advantage of acting chemi-

cally, as it forms an insoluble tannate of strychnine in the patient's stomach. After the employment of any one of these agents an emetic should be promptly given. Mustard in warm water will probably suffice; but a modern practitioner should be prepared to use apomorphine hypodermically. The bowels should be evacuated, croton oil per rectum being an efficient agent.

One reason why mechanical remedies may be persevered with, even when spasmodic symptoms are well developed, is that all the strychnine taken by the patient is not absorbed from the stomach at once, but gradually, and some portions of a poisonous dose may not be absorbed at all. Thus in the White case, tried at the Brantford assizes, last May, Dr. Ellis, the analyst, swore that he had recovered 3-8 of a grain of strychnine from the contents of the stomach of the deceased, and that he expected to recover some more of the drug from the walls of the stomach. Evidently the convulsions from which the deceased suffered had been caused by the strychnine which was absorbed from the stomach, and exerted its special influence on his nerve centres; and, even if these convulsions had been temporarily controlled by chloroform, chloral, or bromide of potassium, the attendant might, with advantage to the patient, have used some one of the mechanical agents referred to above.

From this brief account, it appears that three most useful antidotes to strychnine poisoning, viz., lard, tannin (in the shape of tea), and mustard, are nearly always available, even in very humble homes.

The use of chloroform to control the convulsions of strychnine poisoning is not without danger. Authorities state that it has apparently controlled them, or, when unsuccessful in this way, has made the patient's death easier. Owing to its effect in reducing reflex excitability, bromide of potassium has been used in strychnine poisoning, "repeated doses of from eighty to two hundred and forty grains having been administered" ("National Dispensatory"). When bromide of potassium has been associated with chloral the effect has been better, and with smaller doses of each drug, than if either had been used alone. They may be given singly or combined by the mouth or the rectal route.

"Like many other motor depressants, amyl nitrite has been used in strychnine poisoning" (Butler's "*Materia Medica*").

When sudden spasm of the glottis occurs, a drop or two of the agent may be applied to the nasal mucous membrane of the patient.

Catheterism of the bladder should be performed to favor elimination of the poison, an anesthetic being employed to prevent a recurrence of the convulsions.

"Tobacco has been employed as an antidote successfully in four recorded cases. It is thought to have acted in part by hastening the elimination of the poison by the urine" ("National Dispensatory").

Other drugs to remember are physostigma, camphor, and atropine. In a recorded case ("National Dispensatory"), "one-sixth of a grain of atropine, every ten minutes for three doses, was employed hypodermically, and the patient recovered."

J. J. C.

A PLEA FOR UNION BETWEEN CANADIAN PHYSICIANS.

WE were going to begin this editorial with "*On dit*"; but refrain, as it will be more intelligible to the general reader if written in plain English. We see it stated in *La Revue Medicale*, of Montreal (April 24th), that a Medical Congress is going to meet at Montreal this summer. This Congress is going to establish a permanent association among all French-speaking physicians practising on the American continent. Including practitioners from Louisiana and Canada, there would be over five hundred members. We do not think that there is much philosophy in attempting to found an association among physicians practising on this continent solely on a basis of sameness of language. Medical science is not limited by geographical or political boundaries; it knows no barriers except those erected against man's intellectual efforts. It is for the benefit of all men, and not for the glorification of any race. The French nation has produced so many medical luminaries, that it might be pardoned for wishing to unite physicians in a Congress in which the French tongue only should be spoken; but such a Congress should be convened on the banks of the Seine. A French-speaking Medical Congress, composed of physicians from Canada and all other parts of the American continent, with some celebrities from Europe, meeting at Montreal, would in no sense be representative of the medical profession of Canada. It

would indicate, in no uncertain terms, that the process known as scission is operative among the educated as well as the uneducated class in this country, and that the hatching of a hybrid Canadian race is as far off as it was one hundred years ago.

The French language has infinite charm, and is singularly happy in conveying thought, either from the professor's chair or the printed page; but, to the unimaginative physician, language is but the vehicle of thought; the thought itself is of greater importance than the language in which it is expressed.

And what shall we say of the Canadian Medical Association? Would it not be more friendly and patriotic for Canadian physicians, who speak English or French, to sink minor differences in the cause of their common country? A bi-lingual parliament meets at Ottawa to legislate for Canada, and weighty affairs of state are discussed in either the French or the English language. This practice is the outcome of a written Constitution; but it works well, for it reposes on a basis of mutual good-will. The same admirable feeling, the tie that binds a people in the bonds of amity, should be strong enough to hold together English-speaking and French-speaking physicians in a true Canadian association. The work of such an association could be done in sections, and the French members could read their papers and discuss them in their own language under the leadership of their own officials. This would be a patriotic course, and would prove that an educated class of men take an abiding interest in each other, and are prepared to meet on common ground, for the advantage of their profession and for the benefit of their country. It would also be a strengthening band on that silken tie that binds the two races together under the ægis of the British Empire.

If the English-speaking Canadian physician finds that a common Medical Association will not be supported in Canada, because French Canadian physicians place language on a higher level than patriotism, he may learn to solace himself in the company of his American cousins, and help to carry a few stones for the uplifting of the English-speaking Medical Association of North America.

J. J. C.

ETHICS AMONG CORONERS.—A THREATENED MONOPOLY IN INQUESTS.

A FEW weeks ago, in this city, a most unfortunate shooting accident took place, when a lad, in fooling with his little sister, having a revolver in his hand, shot and instantly killed her. The fatality took place on Sunday afternoon, and before long several coroners were notified, and more than one took up the matter for investigation. Coroner J. M. Cotton had the facts laid before him in the course of a very short time after the little girl died, and then carefully looked into the case. Knowing, however, that a warrant could not legally be filed at the police station until midnight on Sunday, the Doctor taking the further precaution to call up and consult by telephone Crown Attorney Dewart upon this point, Coroner Cotton did not send his warrant down to No. 1 Station till 12 o'clock that night; but to his surprise the sergeant in charge told him then that a warrant in the same case had been filed for registration several hours before by Coroner W. J. Greig (all but whom retired on learning that Dr. Cotton was looking into the circumstances). Dr. Cotton naturally felt aggrieved to find that another Coroner had deliberately "walked in" upon his case, knowing that he had the matter in charge. He reported the facts to the Attorney-General's Department, and also intends, we understand, to take up the matter with the Board of Police Commissioners to find out whether some constable did not overstep his duty, and, as has been suspected for a long time in the city, showed too great a feeling of anxiety to secure, as nearly as possible, all inquest cases for Dr. Greig, who is also one of the junior police surgeons. We hope that this matter shall be settled now, as there has been much comment for the past year or more upon the fact that a man who is almost the youngest appointed Coroner in Toronto should be able to, in nearly every instance, have his warrant filed in No. 1 Police Station prior to that of any of his seniors in office, who for that reason may be better fitted to conduct the more difficult cases than is Dr. Greig. We have heard several of our Coroners make open remarks as to how this can be arranged at the Police Station, some of the policemen having gone as far as to say, when asked

why it was that their surgeon should be shown the preference in inquests, that, if they did not do so, they would in some way or other suffer for it. We claim that anyone who holds an appointment of Police Surgeon should not be allowed to also hold a commission as Coroner. It does not seem fair that one man should have the dual office, and we hope that some action shall be taken at our next parliamentary session to introduce an amendment to the Act which shall settle this just cause of contention. Legislation in this direction is already upon the Statute Book, preventing any surgeon to a railroad from holding an inquest in any case of death in connection with such railroad. This also excludes any surgeon to any manufacturing industry from holding a similar inquest (Section VII., Act respecting Coroners, R.S.O. 1897). Why should this not apply to one holding an appointment as police surgeon? We trust, also, that Dr. Cotton will press his claim before Judge McDougall's Board, and have an investigation put upon foot to find out whether what looks like nothing short of favoritism does exist, and if so, to have it put a stop to, so that when a Coroner other than a police surgeon presents his warrant for registration it will not be refused just because Dr. Greig's was filed first. Most of the coroners in Toronto are gentlemen, and will not intentionally tread upon one another's toes. We cannot see why the same professional ethics does not exist between physicians as coroners as is the case in regular practice.

A. J. H.

CANADIAN MEDICAL ASSOCIATION.

FROM what we can learn, the Winnipeg meeting of this association promises to be one of the best ever held. The railways have granted a single fare for the return trip, with the additional privilege of a single fare from Winnipeg to any point in Manitoba, the North-West, British Columbia, or North Dakota after the meeting. This, of course, will make a large attendance certain.

The Address in Medicine, by Dr. J. R. Jones, Winnipeg, in Surgery, by Dr. O. M. Jones, F.R.C.S., Victoria, and in Gynecology, by Dr. Thomas S. Cullen, of Johns Hopkins, make a nucleus for the programme that will indeed be hard to beat.

In addition to these, the following have promised to contribute

to the programme: Drs. Gilbert Gordon, John Hunter, B. E. McKenzie, D. J. Gibb Wishart, G. Silverthorne, and G. H. Burnham, of Toronto; W. S. Muir, Truro, N.S.; Lapthorne Smith, Montreal; A. Armstrong, Arnprior; I. C. Mitchell, Enniskillen; Prof. Russell, of the University of Wisconsin; H. M. Bracken, of St. Paul, Minn., F. I. Shepherd, Richer and Blackader, of Montreal, and L. H. Warner, of New York.

Judging from the foregoing list, which has been supplied to us by the Secretary, the scientific part of the programme will be almost equal to the social part, and, from what little birds tell us, visiting members may look forward to a rich treat.

The Secretary, Dr. F. N. G. Starr, Biological Building, Toronto, will be glad to furnish particulars to any intending to be present.

EDITORIAL NOTES.

Meeting of Executive Health Officers of Ontario.—Owing to the short time, which intervenes between the close of the proceedings and our going to press, we are unable to furnish our readers with a full report of the meeting of the Executive Health Officers of Ontario, which was held at Brantford on June 25th and 26th, 1901. The nature of the subjects discussed may be gathered from the announcement which appears at page 45.

Appointment of a Lady Graduate to the Resident Staff of Toronto General Hospital.—Miss Helen MacMurchy, M.D., has been appointed to the resident staff of Toronto General Hospital. Having already advocated in this journal (July, 1900) the advisability and propriety of conceding to Canadian lady graduates in medicine the same opportunities for professional training in hospitals as their male rivals, we have nothing to add, except that the practical working out of the experiment at Toronto General Hospital will be watched with a good deal of interest in medical circles.

A Correction.—On page 442 of the June issue of this journal, a paragraph appeared, entitled "A New Medicine Concern," in which it was stated that on the Board of Provisional Directors of the United States Ferrol Co., Limited, appeared the names of Dr.

Alexander McPhedran, Dr. J. L. Davison, and Dr. Geo. A. Bingham. We take great pleasure in now stating that this is not the case, and that these gentlemen are not in any way connected with the Company referred to. We inserted the paragraph as an item of news only, and regret very much indeed having published it without sufficiently investigating the facts.

Toronto Correspondents of American Medical Journals.—

We notice that the *New York Medical Journal* has a special correspondent in Toronto. The *Philadelphia Medical Journal* also has "our special correspondent" at Toronto. Evidently our cousins are beginning to think that there may be something in Canadian medical news worth the gathering. As an indication of an increasing importance, attached by our neighbors to the medical affairs of Canada, and of greater interest felt by American physicians in the fortunes of their brethren in this country, this new feature in the American medical journals is noteworthy.

Lady Doctors Dine.—The annual dinner of the Alumnae Association of Ontario Medical College for Women was a bright and successful function at the Temple Cafe last month. Dr. Jennie Gray acted as president, in the unavoidable absence of the president of the association, Dr. Ida Lynd. The toast-list was: "King and Country," proposed by Dr. Jean Cruickshank, and honored by singing "The Maple Leaf"; "Absent Graduates" was responded to by the reading of letters; "The Graduates," proposed by Dr. Helen MacMurchy, responded to by Dr. Doyle; "Undergraduates," responded to by Dr. Minerva Greenway; "The Women's College Hospital," responded to by Dr. Leila Skinner.

Trinity Doctors at Dinner.—The graduating dinner of the Trinity Medical College class of 1901 was held recently at the Temple Cafe. Dr. C. P. Lusk presided, and Dr. W. J. Brown was secretary of the committee. After the loyal toasts came "Our Alma Mater," proposed by Dr. W. J. Brown, responded to by Dean Geikie; "Medicine and Surgery," by Dr. Ralph T. McLaren, responded to by Dr. Bingham, Dr. Baines, and Dr. Anderson; "Undergraduates," proposed by Dr. W. R. Coles, responded to by Messrs. C. McDougall, B. O'Reilly, and R. Frankish; "Class of 1901," proposed by Dr. R. T. McLaren, responded to by the medallists, Dr. Marshall, Dr. Ferguson, and Dr. Coleridge.

The "Papyrus Ebers."—One of the most interesting articles in the last number of the *CANADIAN JOURNAL OF MEDICINE AND SURGERY* was one entitled "A Medical Work Seven Thousand Years Old," a full translation just completed of the Ebers Papyrus, an Egyptian book devoted to the diseases of man and their cure. Regardless of any expense connected with the same, which must have been enormous, The Palisade Manufacturing Co., of Yonkers, N.Y., are prepared to present to their friends in the medical profession a fac-simile reproduction of the beginning of this, the earliest medical treatise extant, together with transcription into hieroglyphics and translation of a portion of the text. The firm named will be pleased to forward a copy to any physician on receipt of his professional card.

Salol in the Treatment of Diabetes.—Dr. Tesmacher (of Neuenahr), has experimented with salol in eight cases of diabetes, administering 1.30 gramme (almost 20 grains) three times a day to each patient. No effect was observed in three patients. In five others, who had the disease in a moderately severe form, the results were better. In spite of an anti-diabetic diet, the urine of these patients had always contained sugar in the proportion of from 0.6 to 1.5 per cent. After the administration of salol, only traces of sugar were discernible. Dr. Tesmacher observes, "that this action of salol is not lasting, and when the drug is no longer given, sugar reappears in the urine and, little by little, attains the same level as before it was given." This coincides with Fiquet's view on diabetes, to which reference was made in the April number of this journal (see p. 288).

Malt Beer and Part Malt Beer.—As a consequence of the poisoning in England from the consumption of beer contaminated with arsenic, a bill has passed its second reading in the Imperial House of Commons, on which the *Lancet* comments as follows: "Put shortly, the bill is intended to enable the consumer to know what he is not drinking. Beer is divided into two classes, somewhat on the logical process of dichotomy—namely, malt beer and part malt beer. Malt beer means that which is brewed from barley-malt, yeast, hops, and water. Part malt beer does not mean this. These are admirable provisions, in our mind, and we would fain see them extended to all classes of food. Substitutes are

generally harmless and often palatable, but the consumer should know what he is getting. If, for instance, he likes to use cotton seed oil for a salad, let him do so, but he should not have cotton-seed oil palmed off on him under the impression that he is buying olive oil."

Tetanus and Hypodermic Injections of Quinine.—Dr. Desbrousses blames hypodermic injections of hydrochloride of quinine for causing several cases of tetanus among the patients treated for malaria at the military hospital of Majunga in 1895. These hypodermic injections of quinine had been frequently used, although always with great antiseptic and aseptic precautions. Orders were given that the quinine injections should be used as rarely as possible with the greatest antiseptic precautions, and only in the abdominal walls or the flanks of patients. No more cases of tetanus occurred afterwards. Without offering to explain these phenomena, Dr. Desbrousses thinks "that tetanus was produced by an ascending neuritis due to irritation of one or several nerves by the hypodermic injections of quinine." No wound is free from the risk of tetanus. The introduction of a hypodermic needle, a slight graze of the skin, and the extraction of a tooth have been followed by severe tetanus. Besides, "the hypodermic method of administering quinine depresses the heart to a considerable degree" (Butler).

Some Remarks on the Treatment of Gonorrhea.—Dr. Casper (writing in *Berlin. Klin. Wochenschrift*, 1900, No. 22, p. 482) says: "There is no medicine or treatment which can be said to cure gonorrhea with certainty, and in a given time. The practitioner should, above all, endeavor to prevent complications." He obtained no advantage from the use of abortives; on the contrary, they aggravated the disease. In the acute stage, instruments should not be introduced into the urethra. *Local medical treatment should be begun from the first.* Casper used thalline sulphate with advantage in the acute stage in 1-2 per cent. injections. After the acute stage is over treatment by the salts of silver may be employed with advantage; among these salts he gives the preference to the nitrate of silver. Posterior urethritis, in his opinion, requires special treatment. In 85 per cent. of the cases in which this lesion is observed, the prostate gland is affected.

Casper, however, found the gonococcus in only 5 per cent. of such cases; likewise, in 16 per cent. of the cases, changes in the prostate were perceptible on palpation. The treatment of sclerosifying chronic urethritis ought to be, in his opinion, both chemical and mechanical. The chronic prostatitis should be treated by massage. Casper warns his readers against a treatment which is either too timid or too severe, and which may expose patients to neurasthenia.

Immediate Urethroplasty after Traumatic Rupture of the Urethra.—Dr. Carlier (*Soc.-Cent.-Med. Nord.*) recommends an immediate operation in the greater number of urethral traumas. He cites the case of a patient who had fallen astride of a solid body, the injury being followed by free urethral hemorrhage and slight ecchymosis of the perineum. Although a catheter was easily passed, Carlier was not content with the simple introduction of a self-retaining catheter, as certain authorities recommend; but performed external urethrotomy, and found a laceration of the urethra about 3-4 of an inch in length, and a complete crushing of the lower wall of the urethra. He immediately performed urethroplasty. He mentions a second case, in which, in spite of easy catheterisation, he found during his operation a complete circular laceration of the urethra, the two ends of the tube being separated for over an inch. The torn ends were sutured. He thinks that, after recognizing rupture of the urethra in a patient, the surgeon's duty is to perform external urethrotomy, followed by urethroplasty. In this opinion he differs from Delorme, of Paris, who performs external urethrotomy as a primary operation to provide for the escape of urine, and, after waiting a sufficient time for granulations to appear in the wound, performs urethroplasty as a secondary operation. Dr. Moty, who had seen some of Delorme's cases, declared, in discussing the paper, that in some cases of urethral traumatism, the self-retaining catheter could not be borne by the patient, on account of the extreme irritability of the urethra. In these cases a surgeon could not safely do a urethroplasty immediately after an external urethrotomy. The same objection applies when rupture of the urethra occurs in a case of urethritis.

PERSONALS

DR. DWYER, of St. Michael's Hospital, has returned from England.

DR. ALEXANDER MCPHEDRAN, of Toronto, left for England on June 20th.

DR. HOLFORD WALKER last month was at the Tadenac Club, Georgian Bay.

DR. J. M. MACCALLUM spent the last three weeks on a visit to his brother in the States.

DR. BRUCE RIORDAN attended the meeting of Railroad Surgeons at Milwaukee, Wis., last month.

DR. J. M. COTTON spent ten days at St. Catharines last month, resting after his recent attack of typhoid.

DR. J. J. CASSIDY, of Toronto, was one of those who attended the Convention of Health Officers in Brantford last week.

DRS. G. A. Peters, J. T. Clark, Fred. Fenton, and J. E. Elliott were among the medicos at camp at Niagara last month.

DR. BROCK, of Guelph, has succeeded Dr. Wm. Britton, of Toronto, as President of the Ontario Medical Council.

DR. A. W. MAYBERRY left two weeks ago to spend a few weeks at Baltimore, Md. On his return the Doctor will resume his specialty, the eye and ear.

DR. ALEX. PRIMROSE will deliver the Address in Surgery at the approaching meeting of the Maritime Medical Association, at Halifax, N.S.

DR. NOBLE, of Philadelphia, Pa., Dr. Prevost, of Ottawa, Dr. Elliott, of Gravenhurst, and Dr. R. W. Garrett, of Kingston, were among those in attendance at the Ontario Medical Association Convention, ten days ago.

DR. T. G. RODDICK, of Montreal, was in Toronto on the 13th ultimo, and addressed the Medical Council on the subject of Dominion Registration.

DR. FERDINAND FLEURY has been appointed Medical Superintendent of Notre Dame Hospital, Montreal, to succeed Dr. Ethier, who has gone to Europe.

DR. B. E. MCKENZIE attended the meeting of the American Orthopedic Association, held on 11th, 12th, and 13th of June, at Niagara Falls, N.Y. He reports the meeting as having been very successful under the general presidency of Dr. Arthur Gillette, of St. Paul, Minn.

THE trustees of the Hospital for Sick Children, Toronto, have made the following appointments to the resident staff for the ensuing year: Drs. Allen B. Rutherford, John D. Chisholm, W. H. Lowry, and Margaret Macallum. Dr. Macallum is one of the first women to be appointed on the resident staff of any hospital in Canada.

THE trustees of the Toronto Orthopedic Hospital have recently secured a new property at 104 West Bloor Street. Mr. F. H. Herbert, the architect, has for some weeks past been busily engaged upon the plans for remodelling and enlarging the building, and work will be begun immediately. When completed, the hospital will be able to accommodate about sixty patients.

THE following compose the different committees appointed for the ensuing year for the Ontario Medical Council: *Registration*—Drs. Campbell, McLaughlin, Robertson, Hanly, Powell, Sullivan, Stuart. *Rules and Regulations*—Drs. Hanley, Vernon, Lane, Barrick, Henry. *Finance*—Drs. Henderson, Griffin, Douglas, Glasgow, Bray. *Printing*—Drs. Barrick, Macdonald, Stuart, McLaughlin, Spankie. *Education*—Drs. Moorehouse, Roome, Sangster, Moore, Robertson, Luton, Macdonald, Williams, Geikie. *Property*—Drs. Thorburn, Campbell, Williams, Thornton, Roome. *Complaints*—Drs. Griffin, Thorburn, Spankie, Henry, Douglas.

Correspondence.

The Editor cannot hold himself responsible for any views expressed in this Department.

PURE MILK.

To the Editor of THE CANADIAN JOURNAL OF MEDICINE AND SURGERY.

DEAR SIR,—Most practitioners of large experience, especially those practising in cities, have found the problem of successfully nourishing infants who cannot be nursed by their mothers a very serious one. Years ago, when engaged in general practice, I first encountered this difficulty, and the experience arising out of the necessity of providing artificial nourishment for my own children served to emphasize it, and to direct my attention strongly to the great importance of pure milk; incidentally I discovered the difficulty, amounting almost to impossibility, of obtaining such milk. My first child was fed with one of the patent foods and lived only two months, succumbing to an attack of acute digestive trouble. A second one fed upon modified milk, the milk being obtained from an ordinary dairy, and modified at home, was brought up with almost no difficulty, but in the case of my youngest, now almost two and a half years of age, milk from the same dairy, modified in almost every conceivable way, failed to agree, and the outlook for the infant rapidly became serious.

When almost in despair I first learned about the celebrated dairy of the Dentonia Park Farm, and arranged for a daily supply of the milk. This was modified according to my best judgment, and immediately it was apparent that the food thus prepared agreed better than any we had yet tried. After considerable experimenting the best proportions of proteids, fat and sugar, for this individual infant were discovered, and we soon had the satisfaction of noting a marked improvement in digestion and assimilation, attended by a steady increase of weight. I have always felt that, had the child been limited to milk produced and handled as it is in the average dairy, she could not have survived.

At the time of which I write there was no Walker-Gordon Laboratory for the scientific modification of milk at Dentonia, but this has since been established and should, it seems to me, immensely simplify the problem of artificially feeding young infants as far as the neighborhood of Toronto is concerned. I have not the slightest idea to what extent the profession avail themselves of this laboratory, but I can hardly imagine any physi-

cian living within reach of it, if he has acquainted himself with the triumphs of modified milk in infant feeding, failing to use the laboratory when his patients can afford the slightly greater expense of this system of artificial feeding.

When it became known that a public dairy largely on the lines of that at Dentonia was to be established in Toronto with the object of supplying the citizens with milk handled in the most scientific way, it seemed to me that the news would be hailed with delight by all who appreciate the importance of pure food products, and that the law of survival of the fittest could not fail to bring to this particular dairy the patronage of practically the entire city. I have no knowledge of the extent of the trade done by the City Dairy Co., but in a purely incidental way have become acquainted with a good deal of unreasoning and unreasonable opposition to it, and in conversation with different persons when the subject of milk has happened to come up, have been surprised at hearing objections raised and fault found with the milk of this particular dairy by persons whom I expected enthusiastically to support it.

The two things complained of by friends with whom I have conversed, are the appearance and taste. Because the milk looks white* even very intelligent people seem to take it for granted that it must be poor in cream, and the slightly different flavor imparted by the aerating process is also attributed to this small proportion of cream.

Now, Mr. Editor, it seems to me that to the medical profession belongs a share of the duty of educating the public on the subject of milk. People should be taught the elementary fact that the percentage of butterfat in milk cannot be determined by looking at it or tasting it, but must be found out in the laboratory. It should also be more generally appreciated that even rich-looking and good-tasting milk may contain disgusting and dangerous filth. There is as much difference in appearance and taste between absolutely pure, clean, unadulterated milk and the average farm product as between refined sugar and the coarse brown sugar which is now but little used. It is true that the flavor of refined sugar is very different from that of unrefined, but most of us prefer the former. Twice within the past week I have sat down to breakfast in the best hotel of an Eastern and a Western Ontario city respectively. On both occasions the cream supplied for my porridge and coffee was very attractive to the eye but as thin as ordinary milk, and I knew perfectly well that its rich, yellowish appearance came not from a high percentage of

* Since writing this it has been very interesting to note the gradual change to a richer color in the milk supplied by the City Dairy Co.—a change due to the fact that as spring advanced, the cows of the different farms supplying the milk were turned out to grass.

butter-fat, but was imparted to it before it came to the table by the addition of coloring matter. It is anything but a complimentary comment upon the general information of the public in regard to this common food product that they should swallow dyed milk with a relish born of the persuasion that it is cream surpassingly rich in butter-fat. What inducement can there be for dealers to supply clean, unadulterated and uncolored milk if the public demand that which conforms to an artificial and inferior standard? I have never owned a dollar's worth of City Dairy stock, nor has any hint or suggestion that I should "write it up" ever been made to me by any one. I will, therefore, hardly be accused of having any axe to grind. Moreover, I am genuinely sorry for the proprietors of those smaller concerns, which are so often forced out of business by gigantic and powerful combinations of capital. It must not be forgotten, however, that in the readjustments inseparable from reform and advancement, more or less disturbance of existing economic conditions and relations is inevitable, and that suffering and hardship have been the price of progress since the beginning. Public health is so precious that its safety must not be menaced by sentimental considerations; individual interests must always step aside if they conflict with the general welfare. There can be no doubt that the average quality of the milk consumed in Toronto is much better than it was a few years ago, and that the subjects of cleanliness and purity are more closely studied by dairymen to-day than formerly, owing to the increasing interest in the matter that the public is manifesting, but so far as the average methods of milk production and marketing are concerned, there is still room for almost infinite improvement. Believing as I do, Mr. Editor, that the difference between surrounding the production and handling of the milk of this city by modern scientific safeguards, and allowing indifferent happy-go-lucky methods to prevail, is equivalent to the saving of hundreds of lives, especially infant lives, it seems to me not outside the proper office of a medical journal to actively support efforts to improve the general supply, to advocate a wider interest in the subject, and especially to urge upon medical practitioners the duty of not neglecting their many opportunities for sowing the seeds of a more general knowledge of what constitutes good and pure milk. I would be glad to see this important subject receive a share of attention in your columns.

H. P. H. GALLOWAY.

Toronto, May 18th, 1901.

NEW IDEAS IN MEDICINE.

To the Editor of THE CANADIAN JOURNAL OF MEDICINE AND SURGERY:

DEAR SIR,—In the JOURNAL of June, page 442, you quoted from the *Toronto Journal of Osteopathy* as follows: "The English for bacteria," says Dr. Still, is 'buzzard.'" And you say, "Try again, Osteopathy, a buzzard is not remarkable for sense." That may be true, yet the buzzard performs as important a function for mankind in places as do bacteria. For instance, in Japan there are in all towns and cities special laws for protection of buzzards. They are the street-cleaners and removers of garbage from the Empire's back door. Each buzzard (or gang of buzzards) has his own thoroughfare, which he faithfully cleans, and without any inspector to supervise him. Morning and night (twice daily), rain or shine, while I lived in Tokio, my buzzard came to the kitchen door (which there is at the front of the house) and took away, with more or less chattering gossip, whatever refuse the cook had set out for him. He flew afar off with it, where his family could enjoy or bury its tidbits at pleasure. There was no garbage-man in Japan, excepting Mr. Buzzard. He had a monopoly of the business. And if he is "not remarkable for sense," he performed that important duty as regularly and thoroughly as bacteria have done theirs, and still must do it, on the ethnological pathways of mankind's progress.

ALBERT S. ASHMEAD, M.D.

Extermination of Birds.—The extermination of birds is not alone the work of fashionable vanity, but of fashionable gluttony. The recent seizure in a New York cold storage warehouse of great numbers of dead birds during the close season illustrates the easy evasion of the law by those careless of consequences. In hotels, travellers often find upon the bills of fare the names of birds unknown to ornithologists and dictionary-makers. When asked what kinds of birds these represent, the waiters are permitted to answer only by smiles and silence, or by confessions of ignorance. In the cold storage house in New York were found so many birds that the legal fines would have run to millions of dollars. What would they amount to for the United States? As a result of such practices everywhere those butchers and dealers who obey the law are really punished for their honor, while the reckless are rewarded by great profits. We are fond of pointing out excellent spheres of work and usefulness for those who are greatly troubled by a few deaths of animals in scientific laboratories. Why should this stupid and ruinous war of extermination of birds with its great resultant suffering not arouse the energies of the S. P. C. A.? —*American Medicine.*

The Physician's Library.

BOOK REVIEWS.

1. *System of Physiologic Therapeutics*, a practical exposition of the methods, other than drug giving, useful in the treatment of the sick. Edited by SOLOMON SOLIS COHEN, A.M., M.D., Professor of Medicine and Therapeutics in the Philadelphia Polyclinic; Lecturer on Clinical Medicine at Jefferson Medical College; Physician to the Philadelphia and Rush Hospitals, etc. Vol. V., *Electrotherapy*, by GEO. W. JACOBI, M.D., Consulting Neurologist to the German Hospital, New York City, to the Infirmary for Women and Children, and to the Craig Colony for Epileptics, etc. (in two books). Book I., *Electrophysics*, Apparatus required for the therapeutic and diagnostic use of electricity. With 163 illustrations. Philadelphia: Blakiston's Son & Co., 1012 Walnut Street. 1901. Canadian Agents: The Chandler & Massey, Limited, Toronto and Montreal.

The title of this new series, "A System of Physiologic Therapeutics," would, if used alone, be rather obtuse, and would hardly, we think, convey a sufficiently clear idea of the ground which the editor intends to cover. The work is, however, well described as "a practical exposition of the methods, *other than drug giving*, useful in the treatment of the sick." There has never been published, as far as we know, anything in medical literature just similar, either in America or England, and from our perusal of the work so far, we feel that it will take but a short time to make a large number of friends, who in turn will be the source of a just and deserved revenue to the publishers. Volume I. is divided into two books, and deals with *Electrotherapy*. The first book devotes its pages to what the author calls *Electrophysics*. The publisher was fortunate in securing the services of Dr. G. W. Jacobi for the two opening volumes of this series, that gentleman occupying a very high status in *Electrotherapeutics*. He divides Book I. into two parts: (1) *Electrophysics*, and (2) *Apparatus required for the therapeutic and diagnostic use of electricity*. Under the first heading he considers *Frictional (static) electricity*, *dynamic electricity*, effects of the electric current, varieties of *electro-motive force*, and the methods of obtaining and altering

electro-motive force. Under Part II. Dr. Jacobi devotes his space to Galvanic Apparatus and its use, static machines, and finishes with an exceedingly interesting chapter on X-Rays, a chapter which will well repay anyone for the time devoted to its careful consideration.

Volumes III. and IV. of this series will be devoted to Climatology and Health Resorts; V. to Prophylaxis and Hygiene; VI. to Alimentary Therapeutics; VII. to Mechano-Therapy; VIII. to Mental Therapeutics, Rest and Suggestions; IX. to Hydrotherapy, Thermo-therapy and Baths, and Vol. X. to Pneumato-therapy and Inhalation.

Topographic Atlas of Medico-Surgical Diagnosis. By DR. E. PONFICK, Director of the Pathological Institute, the University of Breslau. First volume. Jena: Gustav Fischer. 1901.

This work is to consist of five parts, each of which shall contain six lithographic plates, accompanied by explanatory text. Each plate forms an independent subdivision and represents some special diseased condition, with the secondary effects on the surrounding organs. The object of the whole work is not only to study the diseased organs themselves, but also to show the manner and the degree in which neighboring structures are affected by the primary condition.

Medical and surgical diagnostic measures are daily coming into closer relationship, as medical and operative therapy are being employed together in a constantly increasing number of diseases. This renders it of increased importance that we should be able to survey at a glance all the changes and displacements resulting from disease in any part of the body.

In some measure to accomplish this object Ponfick has resorted to a method long in use in anatomy, namely, that of making frozen sections in order to show the pathological changes and the displacements resulting therefrom in various diseases.

The first volume of his work has been received, and accomplishes the object he aimed at in an excellent manner. It contains six plates: (1) Pneumothorax sinister; (2) Endocarditis cum insufficientia valvulae mitralis; (3) Carcinoma colloides peritonei; (4) Cirrhosis hepatis; Ascites, Icterus; (5) Carcinoma partis-pyloricæ ventriculi et gland. retroperitonealium; (6) Abscessus otiteus lobi temporalis dextri.

Each plate is most accurately drawn and colored, and presents in a striking manner the diseased conditions represented.

The whole Atlas, when completed, is to contain forty reproductions. The thoracic and abdominal cavities are represented by thirteen pictures each; and the cranial cavity by fourteen pictures. The whole work will form a valuable addition to any physician's library.

The Atlas is highly creditable to the publishing house of Gustav Fischer. In its production many difficulties, no doubt, had to be overcome, and the result is eminently satisfactory. The price of each volume is placed at 12 marks (\$3.00), or for the whole work, 60 marks (\$15.00). Single plates can be obtained at a cost of 3 marks each.

A. M'P.

A Text-Book of the Practice of Medicine. By DR. HERMAN EICHHORST, Professor of Special Pathology and Therapeutics and Director of the Medical Clinic in the University of Zurich. Translated and edited by AUGUSTUS A. ESHNER, M.D., Professor of Clinical Medicine in the Philadelphia Polyclinic. Two octavo volumes of over 600 pages each; over 150 illustrations. Philadelphia and London: W. B. Saunders & Co. 1901. Price per set: Cloth, \$6.00 net. Canadian Agents, J. A. Carveth & Co., Toronto.

Dr. Eshner has placed in our hands a translated work of the highest order. He has made additions and annotations where it seemed they would be most serviceable. The book has an appropriate chapter on Diseases of the Skin, Venereal Diseases, Impotence and Sterility in the Male, and Spermatorrhea. The work is in two volumes, which makes it handy for reference and a better library book.

It deals, naturally, with the established facts of medicine, carefully avoiding any methods which are not thoroughly tried treatments. Dr. Eichhorst's specialty as a pathologist and therapist has enabled him to give concisely his own practical experience in these two important branches. His position as Director of the Medical Clinic in the University of Zurich has provided him with clinical material which could not be excelled, and earnest consideration has been given to the subject of treatment. We anticipate many succeeding editions of this most valuable work on medicine.

The volumes are well bound and handsome in appearance.

A. J. H.

The Helmet of Navarre. By BERTHA RUNKLE. With illustrations by Andre Castaigne. Toronto: The Copp, Clark Company, Limited.

An exceedingly fascinating French historical romance, in the time of Henri Quatre of France and Navarre. Henry IV. was the most popular of all the kings of France. He was the founder of the Royal House of Bourbon, and is still regarded by the French People as the beau-ideal of a monarch, an heroic warrior, and a gallant Frenchman. He was a lineal descendant of Louis IX., and was born in 1553. His mother was the heiress

of the King of Navarre. The authoress selected this stormy period as the groundwork for this interesting story, when Henry III. and Henry of Navarre united their arms against the Duke of Mayenne, the Chief of the League who was aided with money by Philip II. of Spain. The War of the League arose out of an association of princes, prelates, and gentlemen of Picardy. The object of the League was at first simply the maintenance of the Catholic as the sole religion of the realm. Henry of Navarre, as a Huguenot, endeavored but failed to maintain peace and the integrity of France by his anti-Catholic means. The country was devastated by war. Fire and sword ravaged every town and village; every plain was a battle-field, every wood an ambuscade, and the whole land became a huge Golgotha. Henry, to mitigate this, consented in 1593 to profess Catholic religion as being that which the majority of his subjects preferred. At the same time he assured the Protestants of his favor and protection, and in 1598 five years later, by issuing the celebrated Edict of Nantes, he secured religious toleration for the Huguenots. Bertha Runkle has shown great tact in limiting the characters in her story, a feature which makes her work much more interesting, as I always thought Dumas in great error in this respect, although I should imagine she has been an ardent admirer of the great French writer. She holds her historical characters well in hand, and has compiled a story which is very creditable to her, and well worthy of careful perusal.

A. J. H.

Principles of Surgery. By N. SENN, Ph.D., LL.D., Professor of Surgery in Rush Medical College, in affiliation with the University of Chicago; Professorial Lecturer on Military Surgery in the University of Chicago; Attending Surgeon to the Presbyterian Hospital; Surgeon-in-Chief to St. Joseph's Hospital; Surgeon-General of Illinois; Late Lieutenant-Colonel of the United States Volunteers and Chief of the Operating-staff with the Army in the field during the Spanish-American War. Third Edition. Thoroughly revised, with 230 wood engravings, half-tones, and colored illustrations. Royal octavo. Pages, xiv.—700. Extra cloth, \$4.50 net; sheep or half-russia, \$5.50 net. Delivered. Philadelphia: F. A. Davis Company, Publishers, 1914-16 Cherry Street.

A medical library can hardly be considered complete without a copy of Senn's "Principles of Surgery." With this sentiment we are sure the author will fully agree.

In this, the third edition, two new chapters have been added. The one on Degeneration appropriately follows that on Regeneration. Commencing with "Atrophy," the simplest form of degeneration, the chapter goes on and considers "Cloudy Swelling," "Fatty Degeneration," "Mucoid, Colloid, and Waxy Degener-

ation," and "Amyloid Changes." It is extremely interesting, and following, as it does, its counterpart "Regeneration," it presents a striking picture to the student or practitioner of surgery.

The other new chapter deals with "Blastomycetic Dermatitis." The chapter is instructive, and should be read by every one, in that the disease is comparatively new, having been first recognized by Tokishige, a Japanese investigator, in 1893.

The book all the way through bristles with practical teaching for the busy practitioner. In fact, if one is thoroughly conversant with the principles of surgery—so lucidly brought out in this work,—he is much more competent to deal with his case than the one who is well posted in a great mass of technique only.

The publishers are to be congratulated on the bookmaking.

F. N. G. S.

Encyclopedia Medica. Under the general editorship of CHALMERS WATSON, M.B., M.R.C.P.E.. Volume VII., Liver to Menopause. Edinburgh: William Green & Sons. 1901.

This volume compares favorably with its predecessors. The article on Pulmonary Tuberculosis is rather condensed, but very good, and of course gives due prominence to out-of-door life and to sanatoria. The article on malaria, by Rees, is brief, but clear and sufficiently comprehensive for the general practitioner. There is an interesting article on the History of Medicine by W. E. E. Willoughby. This is a new and desirable departure in works on general medicine. Physicians generally would be benefited greatly by a fuller knowledge of the history of the progress of medical sciences. The article on tuberculous meningitis by Still is a very good one, and it is needless to say to Canadian readers that the one on Epidemic Cerebro-Spinal Meningitis, by Osler, leaves nothing to be desired. The volume closes with an article on the Menopause, by Mrs. Garret Anderson, M.D., and is an excellent account of the subject, and contains valuable suggestions and advice. The volume is a credit to the book-makers, both in material and workmanship.

A. M'P.

Clinical Pathology of the Blood. A Treatise on the General Principles and Special Applications of Hematology. By JAMES EWING, A.M., M.D., Professor of Pathology in Cornell University Medical College, New York City. Illustrated with 30 Engravings and 14 Colored Plates, drawn by the author. Philadelphia and New York: Lea Brothers & Co. 1901.

Most of the articles and discussions on the blood appear in special journals, which seldom come into the hands of the busy practitioner. These articles appear, also, at irregular intervals and in such a variety of places that it is difficult or impossible for

any one outside a laboratory to keep up with the rapid advances in knowledge regarding the blood, both in health and in disease. Dr. Ewing has collected the latest reliable information, and presents it in compact form in his book, "Clinical Pathology of the Blood."

In the opening chapter he deals with the general physiology and pathology of the blood, and follows with the special pathology in chlorosis, the various forms of anemia, and leukemia. He then describes changes in the blood in acute infections, constitutional, nervous, and mental diseases, and in general diseases of the viscera, and ends with malaria, relapsing fever, and miscellaneous parasitic diseases.

The treatment in the various chapters is brief, readable, and to the point, very little space being given to useless historical discussion. The book is full of useful information for students and physicians, in general or special practice, while for those who make a special study of the blood it supplies a vast amount of valuable information that cannot be obtained elsewhere, except with considerable labor and difficulty.

A. E.

The Practical Household Physician. A Cyclopedia of Family Medicine, Surgery, Nursing, and Hygiene, for daily use in the preservation of health and care of the sick and injured. By HENRY HARTSHORNE, formerly Professor of Hygiene in the University of Pennsylvania, and Professor of Physiology and Diseases of Children in the Women's Medical College of Pennsylvania; author of "Our Homes," "Essentials of Practical Medicine," etc., etc.; editor of the American edition of "Reynolds' System of Medicine." Accurately and profusely illustrated. Toronto: J. L. Nichols & Co.

In glancing over the preface to this book, we find the following sentence: "No intention is herein implied to supersede the attendance of physicians or surgeons upon persons who are ill or seriously hurt. On the contrary, it is hoped that the readers of this book will be thereby better prepared to appreciate and assist the skilful efforts of medical practitioners to relieve suffering and save or prolong life." It will be seen, therefore, that neither the author nor the publishers, in getting out this work, have shown the desire, as has been too frequently the case in the past in such publications, to educate the public in medical lore, and thereby rob the physician of his right to earn what is almost always but a livelihood. The author, on the other hand, has succeeded in placing in the hands of the public at large a book which will enable patients to better appreciate, and benefit from, the efforts put forth by his medical adviser, and in reality assist him in the accomplishment of convalescence.

A Reference Hand-Book of the Medical Sciences, embracing the entire range of scientific and practical medicine and allied science, by various writers. A new edition, completely revised and re-written. Edited by ALBERT H. BUCK, M.D., New York City. Volume II. illustrated by several chromolithographs and 765 half-tone and wood engravings. New York: Wm. Wood & Co. 1901.

The publishers of this medical work are to be congratulated upon getting out Volume II. so promptly, but a short time having elapsed since the first volume was placed in the hands of the profession. This volume is like its predecessor, in being alphabetically arranged, and comprises practically everything medical from Blastoderm to Chloralose. After perusing Volume II. we cannot but conclude that the doctor who possesses a complete set of the new edition of "Reference Hand-Book of the Medical Sciences" will, in it alone, have nothing short of a medical library. The work will be more than complete, at least judging from the first two volumes, and we think that it will be found difficult for any publisher to get out a work which will be more thorough and up-to-date in every respect than that of Dr. A. H. Buck, who is determined to leave nothing undone to have the fruit of his present labor unequalled in medical literature. Among the contributors to Volume II. we are pleased to find the names of two Canadian M.D.'s, Dr. L. F. Barker, now of Rush Medical College, Chicago, and Dr. Beaumont Small, of Ottawa. W. A. Y.

The Acute Contagious Diseases of Childhood. By MARCUS P. HATFIELD, A.M., M.D., Professor Emeritus of Diseases of Children, Northwestern University Medical School; Professor of Diseases of Children, Chicago Clinical School; Attending Physician, Wesley Hospital. Pages, 142. Price, \$1.00 net. Chicago: G. P. Englehard & Co., 358-362 Dearborn Street. 1901.

This compilation is devoted exclusively to the eight principal acute contagious diseases of childhood. The two sections that appear to us as being especially helpful are those dealing with scarlatina and variola. Herein the different varieties of those diseases are carefully discussed.

The volume closes with a very complete description of the now so prevalent disorder, La grippe. The author has paid particular attention to history, etiology, and pathology, and throughout has compiled the opinions of such eminent authorities as Moizard, Holt, Jaccoud, Kennan, Grandin, Bartie, Cohen, closing each subject with his own ideas. The work is replete with much that is new in bacteriological research by Burgess, Tessier, Bouchard, Pfeiffer and others, and in many ways will make a valuable addition to the physician's shelves devoted to pediatrics. We

might add in conclusion that the work of the publishers, G. P. Englehard & Co., of Chicago, is most attractive and well above the average.

W. H. P.

Queen Victoria: Her Life and Reign. A study of monarchical institutions in British countries and Her Majesty's imperial influence. By J. CASTELL HOPKINS, author of the "Life of Sir John Thompson," "Life and Work of Mr. Gladstone," "The Sword of Islam," etc., etc. With a preface by the Marquis of Dufferin and Ava, K.P., G.C.B., etc., late Governor-General of Canada and Viceroy of India. The Queen Publishers, Toronto and Brantford. 1901.

Mr. Hopkins presents his subject in a taking style, due, no doubt, to extensive research in English history and biography, coupled with an innate capacity for the felicitous expression of thought. In some passages he rises to eloquence. The perusal of the work has been a source of positive pleasure, and we feel under an obligation to its accomplished author. The volume is embellished with portraits of different members of the Royal Family of England, and also those of some European sovereigns.

Of interest to Canadians also will be the portraits of well-known statesmen of this country, such as Sir W. Laurier, Sir C. Tupper, etc. The account given of the royal obsequies is most graphic and touching. The paper and illustrations are poor.

J. J. C.

Favorite Prescriptions of Distinguished Practitioners, with Notes on Treatment, compiled from the published writings, or unpublished records of Drs. Fordyce, Barker, Roberts, Bartholow, Samuel D. Gross, Austin Flint, Alonzo Clark, A. L. Loomis, Wm. Goodell, Wm. Pepper, A. Jacobi, J. M. Fothergill, N. S. Davis, J. Marion Lewis, L. A. Duhring, E. O. Janeway, J. M. DaCosta, J. Solis Cohen, and many others. Edited by D. W. PALMER, A.M., M.D. Seventh Edition. New York: E. B. Treat & Co., 241-243 West 23rd Street. 1901.

To choose from the mass of literature at the disposal of the busy practitioner, and attempt to bear in mind what all of the best known writers have found to be the happiest combinations and most successful therapeutic agencies for the treatment of the various diseases, would be a task well-nigh impossible. In this book of "favorite prescriptions," Dr. D. W. Palmer has culled from all of the medical journals, as well as the more recent works, the remedies and their combinations which physicians of the highest repute have found from experience to be most suitable in treatment. The work will be found to be in many cases most useful, and should be placed, not in a doctor's library shelves, but left on his desk for constant reference.

W. A. Y.

Atlas and Epitome of Labor and Operative Obstetrics. By Dr. O. SHAEFFER, of Heidelberg. From the fifth revised German edition. Edited by J. CLIFTON EDGAR, M.D., Professor of Obstetrics and Clinical Midwifery, Cornell University Medical School. With 14 lithographic plates, in colors, and 139 other illustrations. Philadelphia and London: W. B. Saunders & Co. 1901. Cloth, \$3.00 net. Canadian Agents: J. A. Carveth & Co., Toronto.

We have taken occasion to remark before, when reviewing Saunders' Medical Hand Atlases, that, as a guide to the study of the subject, we know of no other series of works which will prove of such assistance as will the Hand Atlases published by W. B. Saunders & Co. The "Atlas and Epitome of Labor and Operative Obstetrics" is certainly no exception to the rule. It is full of beautifully executed plates, showing in the most natural, and consequently correct manner the different manipulations necessary to the successful conduct of obstetrics in its different phases.

W. A. Y.

Annual Report for the Year 1900. E. MERCK, Darmstadt, Germany. Published in March, 1901.

Merck's Report for 1900 is a considerable improvement upon that for 1899. We notice that the publisher has greatly improved his index of diseases, in that they are classified, thus greatly facilitating any work in this direction. The original communications contained in this Report have considerable merit, and the list of pharmaceutical preparations is most complete, altogether making the pamphlet one worth keeping on the desk for constant reference. A copy can be obtained by any physician on application to the firm.

A Compend of Human Physiology. Especially adapted for the use of medical students. By ALBERT P. BRUBAKER, A.M., M.D., Adjunct Professor of Physiology and Hygiene in the Jefferson Medical College, Philadelphia. Tenth Edition. Revised and Enlarged, with Illustrations, and a Table of Physiologic Constants. Philadelphia: P. Blakiston's Son & Co. 1900. Canadian Agents: Chandler & Massey Limited, 235 Yonge Street, Toronto.

This belongs to the series of "Quiz-Compendis." It is not arranged in the form of questions and answers, but is a short and condensed account of the main facts in physiology. These works are intended to be an aid to students during their attendance on lectures. They should be used mainly as a help in reviewing the subject, but should never take the place of the ordinary text-books. Dr. Brubaker's Compend is very full and complete for a work of

this kind, and it is a valuable aid to students while reviewing their work for examinations in physiology.

A. E.

Mistress Nell. By GEORGE C. HAZELTON, JUN. Toronto: The Copp, Clark Co., Limited. Cloth.

Truly "a merry tale of a merry time." The wit and witchery of Nell, the actress, the gay yet admirable Charles the King (her lover), the intrigue of the Frenchwoman, Portsmouth, the finely drawn Buckingham, with the minor characters, all combine to make play or novel, in whichever form the tale is told, a joyous one. This time it's surely "the cart before the horse," to use an expressive but rather inelegant simile—the play was first a success, then the novel was written. Henrietta Crossman has been delighting New Yorkers in her role of Mistress Nell, but let us hope that the inimitable Bernhardt may yet make us all laugh, as she only can, as Mistress Nell, in the Masquerade of Beau Adair. In the meantime, read this little story, amusing, short and tempting to the eye, because of its splendid typography.

W. A. Y.

Essentials of the Diseases of Children. By WILLIAM M. POWELL, M.D. Third edition. Thoroughly revised by ALFRED HAND, JUN., M.D., Dispensing Physician and Pathologist to the Children's Hospital, Philadelphia. 12mo, 259 pages. Philadelphia and London: W. B. Saunders & Company. Price, \$1.00 net. Canadian Agents: J. A. Carveth & Co., Toronto, Ont.

Like former volumes of this series, Saunders' Question Compend on Essentials of the Diseases of Children consists of questions and answers as to the causes, symptoms, diagnosis, and treatment of the various diseases of children most commonly met with. For the student who is preparing for his "final," and for the physician even who has become a little rusty, Dr. Wm. Powell's little volume will be found a wonderful source of assistance.

The Canadian Agency of P. Blakiston's Son & Co., Philadelphia.—The profession will be glad to know that P. Blakiston's Son & Co., of Philadelphia, Pa., the well-known publishers, have appointed the Chandler-Massey Limited, of Toronto and Montreal their agents for the Dominion. The Chandler-Massey Limited but recently established their book department, but it has already made wonderful strides under the good management, foresight, and business acumen of Arundel P. Watts. All Blakiston's books can be procured from Chandler-Massey at a moment's notice. In fact any book, no matter where or by whom it is published, can be ordered through this firm by letter, postal card or telephone.

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Original Contributions.

ECTOPIC GESTATION.*

BY R. W. GARRETT, M.A., M.D.,

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BEFORE commencing the consideration of this subject I desire to express my high appreciation of the motives which actuated the members of the committee on papers in placing under my care a subject of such great magnitude. It is one of vital importance to every woman who expects to become a mother, for her very life may depend on the proper understanding of its causation, early diagnosis and management. It is of vital importance to every practitioner, for at any time he may be called upon to differentiate the condition from others with which it may be confounded, and the responsibility of a life must accordingly depend upon his delicacy of diagnosis, his medical acumen, his judgment, and his ability to carry to a favorable termination this desperately alarming and often fatal condition.

With a full knowledge of the importance and gravity of the subject, and with the difficulties which surround its consideration, and in the presence of those who from a wide experience and vast field for observation have become accurate observers, and in the presence, too, of others who, from their research work, have minds well stored with the results of laboratory investigation, I trust I may be excused if I say I approach the subject with much diffidence and with a consciousness of my inability to do it that justice

*Read at the annual meeting of the Ontario Medical Association, June, 1901.

which its magnitude and gravity demands, and which this meeting, from its very importance, should expect.

A study of medical literature, past and present, goes to show that correct ideas of the causation and earlier changes consequent upon ectopic gestation, as well as a real working knowledge of its management, date back less than twenty-five years. Previous to that time deaths were reported from so-called accidental hemorrhage into the peritoneum, and from intraperitoneal and extra-peritoneal hematoceles. Many cases were reported of fetus found in the abdominal cavity, and of lithopedions discovered many years after the pregnancy from which they dated their origin. A few years ago the profession at large could not but regard as extraordinary the diagnostic acumen of the men who could make the diagnosis of tubal pregnancy on the occurrence of rupture. At the present time, with the increase of literature on the subject, and with our better knowledge of its pathology and symptomatology, every physician is expected to make a correct diagnosis on such occurrence and, in a fairly large proportion of cases, to make a diagnosis before the occurrence of rupture.

Classification.—Every pregnancy is the result of the impregnation of an ovum of the female by the spermatozoon of the male. The normal place for the development of the impregnated ovum is the cavity of the uterus. The channel through which the ovum must pass from the ovary, in order to gain the uterine cavity, is the Fallopian tube. Just where impregnation normally takes place is still an unsettled question. By some the situation is claimed for the uterus alone, by others for the ovary, and sometimes for the tube.¹

On the one hand there is not much evidence for the belief that the seat of normal impregnation is limited to the cavity of the uterus; on the other hand facts are known concerning the invasion of the tubes by spermatozoa, which unmistakably point to the conclusion that normal fructification of the ovum may occur at any stage of its passage from the ovary to the uterus. It may thus be stated that an abnormal arrest, whether mechanical or special, of a fructified ovum in its progress toward the uterus is the determining factor of an extrauterine, ectopic, or misplaced pregnancy. Theoretically this arrest may occur (a) in the ovary, (b) in the abdominal cavity between the ovary and tube, (c) within the tube, and (d) between the tube and the uterus. The first seems to be theoretical only. Many writers deny the possibility of the ovum becoming impregnated within the Graafian follicle and continuing to grow there, while others quoting from various observers acknowledging the existence of such fecundation, freely admit that there are but few indubitable cases on record. Howard Kelly² describes it as "one of the greatest

gynecological rarities." Taylor³ says: "It is possible, but absolute proof of such a pregnancy seems to be incomplete." For a practical study of the subject this variety may be dismissed. The second—arrest within the abdominal cavity between the ovary and the tube—is probably almost immediately fatal to the unprotected ovum, owing to the digestive power of the peritoneum, and consequently may be eliminated from discussion. The fourth point of arrest—between the tube and uterus—may be quite correctly regarded as arrest in the uterine portion of the Fallopian tube. To all intents and purposes, then, we have at the outset, but one kind only—arrest within the tube, or *tubal pregnancy*, and it is to this variety I shall mainly direct your attention. All the other varieties are but later developments of tubal pregnancy owing to a secondary invasion from the Fallopian tube. These may be conveniently divided into three groups: (a) tubo-abdominal, or simply abdominal pregnancy, in which there is a secondary invasion of the abdomen; (b) tubo-ligamentary, or broad ligament pregnancy, in which there is a secondary invasion of the broad ligament and subperitoneal tissues; and (c) that subdivision of the tubo-uterine in which there is rupture into, or secondary invasion of the uterus.³

Etiology.—A careful and thorough consideration of the causation of ectopic gestation is indispensable for a proper explanation of many of the clinical symptoms observed, as well as for an accurate diagnosis at an early date.

Among the classical causes put forth in the various text-books, both large as well as small, one finds something like the following: Diseases of the mucous membrane depriving it of its cilia; other inflammatory changes in the mucous membrane; contractions in the calibre of the tube, the result of chronic salpingitis or perisalpingitis; peritoneal adhesions constricting or distorting the tube; intratubal polypi; atresia of one tube with external migration of the fertilized ovum, or of the spermatozoa of the opposite side; all pointing, as they do, to a previous history of pelvic disease or decided deformity in some form. With these the etiology generally stops, a fact which is at least misleading to the clinical observer. With such etiological factors alone before his mind, he will pass by as impossible an otherwise strongly suspected case.

A study of the development and structure of the tube, and the means afforded by it for the transit of the ovum, will serve to explain the occurrence of ectopic gestation in a woman with no history of pelvic disease, or of long sterility, or, in other words, the occurrence of ectopic gestation in a perfectly healthy woman with normal menstrual functions.

The delicate plications of the mucous membrane of the tube, covered with innumerable cilia waving always toward the uterus,

tend to sweep the ovum onward and outward, while the peristaltic action of the muscular fibres of the tube aids in the work done by the cilia. If from any want of activity on the part of the cilia, or if the action of the muscular coat be impaired, or both, owing to some nerve influence, it cannot fail to have its bearing on the progress of the ovum.

Slight congenital anomalies of the tube, the result of anomalies in early embryonic development of the Mullerian ducts, may produce an imperceptible stenosis in the calibre of the tube, yet sufficient to impede the progress of the ovum on its way to the uterus. Unusual hyperemia, or marked menstrual changes in the tubal mucous membrane renders possible an arrest of the ovum within its folds. One can scarcely doubt that menstrual changes in the uterine mucosa prepare it for the reception and implantation of the impregnated ovum, and when the tubal mucous membrane undergoes unusual menstrual changes, it not only diminishes the calibre of the tubal bore, but it becomes a soil in which an impregnated ovum may easily implant itself.⁴

A further study of the anatomy of the tube teaches us that it is not a straight tube but a convoluted one, bound down at every bend by fibrous bands beneath the serous covering, and that its mucous membrane is arranged in plications, each forming elevations with recesses or depressions between them. From this it may readily be inferred that the journey of the ovum from the ovary to the uterus is naturally a slow one, being retarded by the convolutions of the tube and the irregularities which the plications afford. Next we must remember that the growth of an ovum once fructified is rapid in the extreme, reaching in size at the end of the second week from three to six millimetres in diameter. Now, if there be any diminution in the propulsive power of the cilia, or failure in the peristaltic action of the muscular coat of the tube, or any diminution in the calibre of its bore, the result of menstrual changes in the mucous membrane, or of congenital anomalies, it necessarily follows that the ovum will be further impeded in its journey to the uterus. If to these impediments we add the further difficulties which a fructified ovum, rapidly increasing in size, presents to a canal already somewhat crippled in its efforts to perform its function, it will readily be seen that a point within the tube may be reached when the fructified ovum can no longer be propelled on its journey, arrest must take place, and an ectopic gestation initiated at that point.

Once the ovum has become arrested within the tube, it is there surrounded by mucous membrane within which the chorionic villi develop, and to which the ovum becomes attached, but it is exceedingly doubtful whether there be any true decidual tissue or not. A point which is worthy of careful consideration is the

rapidity with which the local blood vessels become enlarged and dilated. Vessels which ordinarily are quite small become doubled, and even trebled, at a remarkably early period of tubal growth. This is the source of the greatest danger, and accounts for the violent hemorrhage and rapid death after early rupture.

The formation of a decidua within the uterine cavity, while the early changes are taking place in the tube, is also a matter of considerable importance from a diagnostic standpoint. Death of the ovum, in whatever way brought about, is often associated with the shedding of the decidua, which may be cast off in its entirety, or more usually in small pieces, or as a shreddy-like material.

With the growth of the ovum the tube distends, but from its structure and anatomical relations it is very evident that it cannot long keep pace with the growth within it, and consequently most tubal pregnancies end in abortion through rupture of the tube. Many, however, become abortive by hemorrhage from their own blood vessels, and the formation of a tubal mole within the tube. In only a very small proportion of cases does the fetus, after rupture of the tube, go on to full term within the maternal organism. A pregnant tube may rupture very early within the first four or five weeks, or it may continue to distend for several weeks longer, three months being about the outside limit.

Very early rupture has only recently received the attention the great dangers attending it deserve. It not infrequently occurs in those cases in which ectopic gestation has not even been suspected, or in which, from the paucity of the symptoms, the physician has had no material to guide him in that line of thought. There has been no history of ill-health or of pelvic disease, no early signs of pregnancy, unless possibly some ill-defined irregularities at the last menstruation.

I take the liberty of briefly quoting a case which came under my observation some three years or more ago, as a means of picturing the clinical history of such cases.

Mrs. B., aged about twenty, a fine, healthy-looking woman, without history of previous illness of any kind, and married only a few months, was on her return home from a short trip on the steamer seized with rather sharp pains in the abdomen, similar to an attack of intestinal colic or acute indigestion. Nausea and vomiting soon followed, the vomited matter being made up of a full dinner which had been partaken of an hour or two before, and which contained a considerable amount of green vegetables. The general history of the patient elicited nothing special; she had menstruated twelve days before quite naturally as far as she knew. She was given a hypodermic of morphia by her regular physician who was summoned, and advised to remain quietly in bed until

his return a little later. Not long after the husband visited the family physician and announced that his wife was better, was resting comfortably, and that there was no necessity for his return. Early in the evening she complained of feeling weak and faint, and on the arrival of a friend the physician was again sent for, who found an anxious, if not an alarming, condition of affairs. I saw her at once in consultation. The patient was faint and collapsed, the pulse small, weak and thready, the temperature subnormal, the extremities cold, and a cold, gray appearance had spread over the countenance. A careful enquiry elicited that the pain had become localized in the left iliac region. A vaginal examination revealed nothing which would aid in making a diagnosis—*no tumor could be felt*. After a hurried preparation, she was taken to the General Hospital, where we at once opened the abdomen. The cavity was full of blood; I did not think it possible that the abdomen could hold so much, or that a person could lose so much blood and yet be alive. The left tube was first examined, and a rent from which blood was still oozing was discovered in its isthmal portion, about three-quarters of an inch from the uterine cornu. The ovum—about the size of a bean—was found on the anterior surface of the broad ligament, between that structure and the bladder. After removal of the tube the abdomen was filled with salt solution and closed. Intravenous saline solutions were freely used, but she was too exsanguinated to react, and died some four or five hours after. After operation an examination of the tube was made. There was no swelling except at the seat of the pregnancy. The part enclosing the pregnancy was thinner than usual, but without any evidence of compensating growth. The tube seemed to be fully developed; the opening through which the pregnancy had escaped had the appearance as if a small pistol bullet had pierced it from within outward.

Instead of early rupture there is another cause, and, if the most recent microscopical investigations into the early pathology of tubal pregnancy be correct, is the most frequent primary cause of the interruption of such forms of pregnancy, viz., the formation of what has been termed "tubal mole."⁵

The ovum, during its first few weeks of growth, depending as it does for life upon very delicate chorionic villi lightly attached, is in constant danger. Hemorrhage from the tube wall or gestation sac into the intervillous spaces, even though very slight, is apt to detach and crush a number of villi, and in course of time will generally cause the death of the embryo. In more severe hemorrhages, the chorion is more or less completely detached from the decidua, and at once death of the embryo takes place, forming in the tube what is known in uterine pregnancy as "blighted ovum," and may be here termed "tubal mole." The blighted

ovum now acts as a continuous irritant to the tube, producing hyperemia, followed by increasing vascularity and thickening of its walls. Repeated hemorrhages occur, some of which if the ostium abdominale be pervious, passes into the abdominal cavity; other portions of the blood form lamellated clots within the tube, which in their turn increase its size and weight. The overburdened tube now falls over backward and reaches the floor of the pelvis on its own side, dragging with it the ovary and mesosalpinx. With this displacement of the tube there is consequent derangement of the blood return. Torsion of the blood vessels increases the difficulty, and there is, as a result, increased bleeding, often very abundant, into the tube and pelvic cavity. With repeated hemorrhages there is soon formed in the pelvis a well-defined tumor of varying size composed of tube, ovary, and blood-clot, pushing the uterus to the opposite side, and an intraperitoneal hematocele is now formed. This, by repeated hemorrhages, may go on and increase to a large size, filling up the pouch of Douglas and possibly rising up into the iliac fossa, or filling the whole of the lower part of the abdominal cavity.

A considerable number of ectopic gestations have a longer tubal existence than that described. The period to which the pregnancy may advance without rupture will depend much upon the direction in which the growth is greatest. The tube, subject to slowly increasing pressure from within, becomes stretched and thin, and, as it enlarges, it may open up the layers of the mesosalpinx by which space is gained in which pregnancy may develop further without interruption. But the time comes, at the furthest about the third month, when the space is altogether insufficient for the growing tumor. In this case either the layers forming the mesosalpinx must be still further displaced and the pregnancy burrow downward into the cellular tissue beneath it, or the upper layer will become thinner and thinner, until rupture takes place with partial or complete extrusion of the pregnancy into the abdomen. The amount of hemorrhage in this form of rupture is variable, depending much upon the placental site. Should the placental site be distant from the seat of rupture it may be slight, as the portion of the tube in which rupture has taken place may have been almost entirely deprived of its blood supply by its conversion into a thin membrane. If the placental site be torn through, undoubtedly the bleeding will be severe, and at times fatal. In some cases as the blood pressure falls hemorrhage ceases, for a time anyway, and an intraperitoneal hematocele of varying proportions, according to the amount of blood lost, is formed. The patient will be further subject to repeated hemorrhages from increasing detachment and protrusion of the placenta. In this way the hematocele increases in size until it may assume large proportions.

We might here, with some degree of profit, draw attention to the different formation of the two varieties of intraperitoneal hematocele, which, when fully formed, would appear to be identical. In the first variety—that which is formed as the outcome of a tubal mole—it will be noticed that the early formation was the result of a constant dribbling from the tube, partly consequent upon the irritation produced in the tube by the presence of the mole, and partly by the distorted blood vessels, varied by an occasional free bleeding at irregular intervals. In the second the hemorrhage is sudden, relatively copious, and arises directly from the tear in the tube, or from separation of the placenta.³

Should the gestation sac in its growth separate the layers of the mesosalpinx, especially if the site be near the centre of the tube, it will ultimately give way in that direction, and the fetus is extruded into the connective tissue space between the layers of the broad ligament, forming what is usually termed “tubo-ligamentary” or “broad ligament pregnancy.” With this rupture there is usually considerable hemorrhage, but it is limited in amount by the attachment of its dense and unyielding walls, and consequently cannot attain any very great size. In this way is formed an extraperitoneal, or broad ligament, hematoma. This brings us to the consideration of the third form of hematocele, and the oft-repeated statement that every hematocele is the outcome of an ectopic gestation, and that when no fetus has been discovered in it, nor any remnants of a previous gestation, it is no evidence to the contrary. While intraperitoneal hematocele may be said to be almost always due to an ectopic gestation, the existence of a broad ligament pregnancy is not always to be considered as having existed when a hematoma is discovered in it. On the contrary, I believe that they are only so formed in a minority of cases, and that the majority of them are owing to menstrual irregularities, arrest of menstruation, or to chronic pelvic inflammatory diseases.

The fourth subdivision in the classification of ectopic gestation, although it cannot be said to be extrauterine, deserves some slight separate consideration. In tubo-uterine or interstitial pregnancy the impregnated ovum develops in the portion of the tube which lies within the uterine wall. It is recognized by all observers as being exceedingly rare. In a collection of 1,324 cases but forty were said to have been interstitial.⁶ The cause of this form will in all cases be found to be owing to contraction of the ostium uterinum, either permanent or muscular, so that it refuses to admit the passage of the fertilized ovum. On account of the situation primary rupture may be delayed as far as the fourth month, or even longer. When rupture takes place, it may be into the uterus, and will then become, if we follow up the classification

initiated, secondary intra-uterine pregnancy. This classification seems to be largely theoretical, as I am unable to find any positive demonstration of its ever having taken place. The only rupture that is known to have taken place is into the abdomen. Because of the thicker wall and the greater vascularity of the sac, intra-peritoneal rupture is usually more rapidly fatal in this variety than in the ordinary tubal pregnancy. Taylor says: "Hitherto this has always proved fatal in a very few hours." This form of pregnancy is apt to be confounded with pregnancy of the rudimentary horn. The diagnosis is said to be exceedingly difficult, if not impossible, previous to opening the abdominal cavity.

Symptoms.—When speaking of early rupture of tubal pregnancy, I anticipated some of the remarks on this part of the subject by pointing out the difficulties that lie in the road to making a diagnosis, owing to the absence of many, if not of all, the classical symptoms generally enumerated. In early rupture—the most fatal form if we take frequency into consideration when comparing it with interstitial pregnancy—there will likely be no pelvic or abdominal signs of definite importance. Very rarely is there any evidence to be obtained from the condition of the breasts. Often the earliest and only symptom is sudden abdominal pain, confined for the most part to one or other iliac region, and associated with symptoms of shock and hemorrhage.

While many cases are of this sudden and wholly unexpected type, a large proportion of ectopic gestations have well-defined symptoms, if carefully and diligently sought for. There are three links in the chain of symptoms which should receive the most earnest consideration, and which I think if properly followed up will aid in no small degree in arriving at an early diagnosis. They are:

1. The pre-pregnant history.
2. The menstrual history.
3. Uterine hemorrhage and the nature of it.

1. *The pre-pregnant history.*—In a large proportion of cases there is a history of several years having elapsed since the last pregnancy, or the patient has been married a number of years without conception. In a moderate proportion of such cases there accompanies this history one of pelvic disturbances, it may be simply of dysmenorrhea in some form; or it may be of a more serious or constant type, pointing to tubal or ovarian inflammatory disease. But whether one or both of these be present, a point that may often be elicited is that for a short time at least there has been a lull in these symptoms, the patient expressing herself as feeling better for some time past than she has perhaps for years before. This point is well to remember, for it will aid materially in making a differential diagnosis, in that there is a history of

illness rather than of improvement in health immediately preceding the formation of a tumor with which the condition might be confounded.

2. *The menstrual history.*—This link in the history possesses two distinct types. (a) The patient gives an unquestionable history of amenorrhea, she declaring that she has exceeded her normal time by one or two months. Such cases facilitate diagnosis, in that our suspicions are at once aroused to the strong possibility of pregnancy, and accordingly we are put on our guard. (b) The second type is that in which the patient gives a history of menstrual regularity; "she has never missed a term." Such a history is naturally misleading, and, unlike the other, throws us off our guard. If, however, we inquire very closely into the menstrual history of the last one or two periods we will find a change in their character. Previous to that there was a certain type for her which she always looked upon as being natural and which she always expected. Now she remembers, on thinking carefully, that her "monthlies" had not been the same. The first period had been delayed somewhat, it had not come on as it should, or it had been rather scanty. Perhaps the second one had come earlier than expected, and perhaps more profuse or unusually protracted. In fact she may say that she has not yet *quite got over her last monthly*, and that she is unwell at the present.

3. *Uterine hemorrhage.*—Whether there be a history of amenorrhea or irregularity in a suspected case, a period arrives when uterine hemorrhage is a symptom. In the case where there is a history of amenorrhea it will likely be considered by the individual as a return of her delayed monthlies, or it may be regarded as an early abortion. In the cases without such history the menstrual flow, instead of stopping as it should, continues for an indefinite period. An examination of the character of the hemorrhage is of the greatest importance. The blood will be found to be almost invariably dark in color, moderate in amount, steady in the rate of flow, and decidedly thickish.⁸ Gushes of bright blood occasionally occur, but they are exceptional and small in amount. The hemorrhage, as a rule, rises from the partial or complete separation of the decidua, and consequently shreds or portions of decidual membrane, rarely the membrane in its entirety, may be found in the vaginal discharges. At this period there arises the possibility that it is an early abortion. I would particularly draw attention to the characteristics of the uterine hemorrhage. *It is dark in color, moderate in amount, with occasional small gushes of bright blood.* These facts will aid largely in diagnosing it from the re-appearance of a delayed, or from a prolonged menstruation, in that there is rarely if ever gushes of bright red blood; and from an early abortion, as the blood at first

is bright, often very profuse, and coming away in large clots. Later, in cases of incomplete abortion, the color of the blood is dark and moderate in amount, but there is usually an odor of decomposition about it. The consistence of the discharge is an important point. *It is thickish*, in fact it has a mucous tenacity about it which is not the case in menstrual blood or in incomplete abortion. There is still another point to be gained from an investigation of the discharges, viz., *the odor*. There is accompanying abortion an odor which can always be recognized in its highest intensity in labor at full term, but which is not recognized in the uterine discharges of an ectopic gestation. In ectopic gestation the odor does not differ from that of the ordinary vaginal secretion.

In making a physical examination I shall pass by those early symptoms of normal pregnancy, and which may be present in ectopic gestation, such as changes in the breast and the color of the vaginal mucous membrane. Sometimes they are scarcely recognizable, sometimes absent altogether. Much stress is often laid upon enlargement of the uterus, "bearing," as some writers say, "a strong resemblance to that of the subinvolted uterus."³ The symptom is quite often misleading. Not infrequently the uterus is scarcely perceptibly enlarged, even when measured by the uterine sound. In what is known as the Jessop case¹¹ the uterus at a full term abdominal pregnancy is described as feeling somewhat enlarged, and on measurement by Simpson's sound its cavity was found to be two and a half inches in length. The uterus will, however, always be found softer and more rounded off than an unimpregnated one. The condition of the cervix is also an important means of diagnosis. The os has a velvety feel, the cervix is softer than normal, and when there is uterine hemorrhage the cervical canal somewhat expanded, thus differing from a normal menstruation. I leave out intentionally those forms of dysmenorrhea which are described as *mechanical* and *membranous*, in that on careful enquiry there will be a history of one or other form of dysmenorrhea on many previous occasions. Again, while it is noticed that the cervical canal is somewhat dilated and the cervix softened, the extent of dilatation is never very marked; nor is the angle between the cervix and body of the uterus obliterated. This affords another point in differentiating ectopic gestation from early abortion.

The presence of a tumor in one or other fornix of the vaginal vault, and lying by the side of the uterus, but separate from it, is another important symptom. In the earlier stages, before the growth has assumed any size, and particularly when the gestation sac is in the isthmial portion of the tube, such will not be readily felt. If anything is discovered bimanually, it will be in the form

of a small spindle-shaped enlargement in the tube. Later, and especially when the gestation is ampullar, or the pregnancy has terminated in the formation of a tubal mole, this mass will topple over, after the manner already described, and will be found in the vaginal vault, either as a rounded or elongated tumor, according to whether the dilated ampullar end of the tube lies vertical or horizontal on the pelvic floor. This point it is well to remember, as we are told to expect to find on examination an elongated tumor. Such will not be the case when the rounded out ampullar extremity stands, as it were, upon its head on the pelvic floor, the isthmial end extending somewhat obliquely toward the uterus. The tumor will then have a rounded-off feel resembling a cystic ovary.

Much, too, has been said about pulsating vessels being present in the vaginal vault. This sign, when present, must be a very valuable one, but it is not always present. It cannot be perceived before prolapse takes place, unless one has a touch sufficiently sensitive to distinguish the increased volume in the pulsation of one uterine artery when compared with that of the other. After prolapse it is not always possible to distinguish increased pulsation until adhesions have taken place and collateral circulation supplied.

I have selected the following case for illustration because of its very recent occurrence and characteristic history. Not the least interesting point about the case is the remarkable coincidence of its presentation at the office at the time when the section of the paper just under review was in preparation.

Mrs. B., aged 31, a strong, vigorous, healthy-looking lady, came to my office on May 6th last, complaining that she had been "unwell" for the last month or more. She had been married thirteen years and was the mother of three children, the youngest three years and a half old. Her "monthlies" had always been regular and painless except some six years ago, when she had been irregular as to time for many months. She last menstruated January 30th, missed in February, and again at the end of March. On April 2nd she commenced to lose some blood having, as she said, all the characteristics of her ordinary menstruation. This discharge continued in varying quantity throughout the whole month of April, and up to the time of her appearance at the office. There never was at any time an immoderate flow. No clots had been passed, sometimes the blood seemed quite bright, or brighter than usual. She was quite certain that nothing had come away that would attract attention as unusual. She had none of the early signs of pregnancy so characteristic of her in former pregnancies, and accordingly felt quite certain she was not pregnant. About three weeks before she had rather a sharp pain in the left iliac

region, which lasted an hour or two and was accompanied by vomiting. On examination I found in the vagina, and exuding from the cervical canal, a brownish-black discharge, small in quantity, and with a thick mucous-like tenacity. There was no shreddy material that I could detect with the eye. The cervix was soft and the canal somewhat patulous. The uterus was not enlarged. A small, smooth, globular tumor, freely movable, and about the size of a Tangeline orange, could be felt in the left vaginal fornix. The tumor was only perceptibly tender, and unusual vascularity in or about it could not be detected. On May 8th, two days following, she returned to the office saying she had been seized with a severe pain in the left iliac region late in the forenoon, and that she was still suffering from it. I ordered her at once to the hospital, to be kept there under strict observation. Late in the evening I again examined her, and found the same condition as previously, but without symptoms which might cause anxiety as to a possible rupture. Early the following morning I operated. The pregnant tube—the left one, and which I now present to you for examination—was readily lifted from the floor of the pelvis. There were no adhesions, and its removal was completed without event. Dr. W. T. Connell, pathologist, has kindly furnished the following report: "The ovary is small, measuring 3 cm. x 2.2 cm. x 1 cm., and contains a corpus luteum measuring 1.3 cm. x 1 cm. x 1 cm. The tube shows towards its abdominal ostium a globular enlargement 5 cm. x 4 cm. x 3 cm. The ostium of the tube is open, but the fimbriae are partly inverted. On cutting into the enlargement it is found to consist almost completely of clot; a few shreds of tissue are visible, but cannot be recognized without microscopic investigation. The corpus luteum is that of pregnancy, and the enlargement of the tube a tubal mole."

Enticing as the subject may be, time will not permit a study of the further development, mode of growth, or physical symptoms of the various kinds of hematocele, the outcome of ectopic gestation, and which have been so well illustrated in a remarkable series of lectures on ectopic gestation, by John W. Taylor, of Birmingham,³ nor of the final termination of the secondary broad ligament and abdominal pregnancies, the outcome of primary tubal pregnancy. The very interesting discussions which have been in progress of late years as to the fate of the fetus after rupture into the abdominal cavity, whether it lies naked there, or is still enveloped in an amniotic sac, is an inviting field to enter. It has generally been conceded that a continuation of the gestation is impossible on account of the digestive power of the peritoneum, and accordingly various explanations have been advanced for the occurrence of the seemingly impossible. Tait¹⁰ advanced the

theory that all such pregnancies which had survived intraperitoneal rupture were originally broad ligament pregnancies which had remained till the seventh or eighth month, and when rupture took place the vitality of the fetus was maintained, "its tissues having arrived at a period of development by that time which enabled them to resist the efforts of digestion which doubtless would be directed toward them." Taylor, in his clear and comprehensive way, defines the more generally accepted theory on the subject. "When a fetus which has already formed within the Fallopian tube escapes into the abdomen of the mother, enclosed in its own *unruptured membranes*, pregnancy becomes 'abdominal.' If the placenta retains its attachment to the tube, and receives sufficient blood supply from the maternal blood vessels, the pregnancy may pursue an uninterrupted course to term, and both child and placenta attain mature development within the peritoneal cavity of the mother. The protection of the *unruptured amnion*, however, appears to be absolutely indispensable for this development." The point claimed is that every abdominal pregnancy which has maintained a prolonged growth, or reached full term, has done so within its own sac, which has separated it from the general peritoneal cavity. That this sac may exist as a scarcely perceptible membrane, or thin veil, and perhaps spread out from organ to organ, and intestine to intestine, nevertheless it can on careful observation always be demonstrated.

In cases reported of the child lying naked in the peritoneal cavity, he asserts that a careful analysis of official reports always gave evidence that such a membrane or sac existed. Mordecai Price,¹² in an interesting article on this subject, is still more sweeping. He says: "The only way an intraperitoneal pregnancy can come to term is encapsulated in the amniotic sac. The sac is a foreign body in the peritoneum, and adheres to everything coming in contact with it. The adherent viscera protect as well as nourish the displaced ovum. The peritoneum would digest the fetus at any age not protected in some way from its influence."

The further formation and growth of the placenta after primary rupture is another interesting field for investigation and study for the obstetric surgeon. What to do with the placenta is one of vital importance. A mis-step in its management at the time of operation may cost the patient her life. Sutton and Giles²⁰ write: "A uterine placenta consists of fetal and maternal elements, but a tubal placenta possesses fetal elements only, for in a tubal pregnancy a decidua forms in the uterus, not in the tube; further, the tubal mucous membrane takes very little share in the formation of the placenta." This is probably true in the early period of ectopic gestation, but as the placenta increases in size, and particularly after rupture, it not only takes up and

changes into its own tissue that of the Fallopian tube, but often also spreads out and becomes attached to organs and structures in the immediate neighborhood—the back of the uterus, the broad ligament and the pelvic walls being favorite sites for such extension of attachment.

A third interesting field that might be presented for study is the management of full term ectopic gestations. So satisfactory have been the recent efforts of surgeons to take into consideration the life of the child, as well as the mother, that definite rules are being laid down for their guidance. Edwin B. Cragin, in an article on "The Treatment of Full-term Ectopic Gestation,"¹³ asks and answers three very vital questions:

1. Is the viable ectopic gestation worth saving?
2. Do the attempts to save the child seriously increase the mortality or morbidity of the mother?
3. What is the best procedure at the time of operation?

As to the first question, the writer replies in the affirmative, and shows photographs of three fetus which were in a good state of maturity: The only one of three born alive is reported as leaving the hospital a vigorous, healthy child.

Taylor says in regard to this question, "So far as my own experience goes, the extrauterine child, at term, in size, weight and nutrition is in no way behind the average. The child is often locally affected or malformed. These deformities are most commonly met with in children of abdominal pregnancies. The children of ligamentary pregnancies, and particularly those of the posterior variety, may be free from any visible defect whatever."

As to the second question, Cragin says: "Maternal mortality, when the operation is performed during the viability of the fetus, will always depend very largely upon the judgment and skill of the individual operator in his decision as to the treatment of the placenta, viz., whether it can be removed without great danger of fatal hemorrhage, or whether it is wiser to leave it to be removed or to come away later."

The third question is subdivided into a discussion on the best time to operate, and the technique of operation. It is argued, and apparently with much reason, that while "any additional growth and development which can be given the child is a thing to be desired," it must be admitted "that at the completion of the full period of gestation, and during the spurious labor, there is some danger of rupture of the gestation sac and fatal hemorrhage," and accordingly, "when the fetus is alive, and with the mother under careful consideration, and in the absence of unfavorable symptoms on her part, at about eight and one-half months of gestation is the most desirable time for operation in the interests of both mother and child."

I have trespassed some little distance beyond the limit of my intended paper, but I trust not without some profit.

I have endeavored to elucidate as far as time and my own feeble efforts will permit the causation and early symptoms of this important subject, and to trace the early growth of the ovum up to the time of rupture or termination in tubal mole. Here, with a few additions having reference to intra-abdominal life after rupture, I may be permitted to rest the subject, with a confidence that the points which have been raised will elicit an earnest discussion from you, and in that way I shall be able to share with you your knowledge and experience.

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THE EARLY RECOGNITION AND TREATMENT OF PULMONARY TUBERCULOSIS.*

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It is too well known what a scourge tuberculosis is to render it necessary to cite facts in proof thereof; nevertheless, it is well to refresh our appreciation of the matter from time to time by recalling a few important facts. According to the Report of the Provincial Board of Health in 1899 there were 3,405 deaths from tuberculosis out of a total of 28,607, nearly 1 to 8. This is a trifle lower than the death-rate usually attributed to tuberculosis, and may possibly be due to the more intelligent management of the disease. It is, however, not so great a reduction as has occurred in many parts of the United States, in Glasgow, and some other parts of the Old World. No doubt the education the public is now receiving will in the near future do much to lessen this death-rate, chiefly by curtailing infection rather than by curing the infected.

It is to be noted, however, that the death-rate is not a true index of the prevalence of the disease; this was well shown by the experience of a German investigator who tested 2,500 apparently healthy persons with tuberculin, and in 18 per cent. of these there was a decided reaction. This result has been strikingly supported by those of Councilman, of Boston, who found in a large series of autopsies on cases dying of diphtheria that 17 per cent. showed evidences of tuberculous infection. These facts go to show that probably one in every five or six people are the subjects of tuberculosis, latent or active. In many of these, fortunately the infection remains permanently quiescent. The old German proverb, "that every one has little tuberculosis," is not far astray.

The early recognition of the disease is of vital importance; it is of importance in the first place to the patient himself, because it is only in this stage that there is much ground for hope of a cure; and, in the second place, to his friends, because he has not yet become a source of infection, as ulceration and dissemination of bacilli in sputum, etc., have not begun. At this stage the patient's vital powers are still good, and they have to contend only with the bacillus of tuberculosis; at a later stage there is the secondary infection by streptococci, staphylococci, or pneumococci, and the condition becomes one in reality of septic as well as tuberculous infection.

* Read at meeting of the Grey and Bruce Medical Association, at Walkerton, May, 1901.

It has been the custom of some writers to speak of a pre-tuberculous stage of this disease. There can be no doubt that this is in reality the early stage of tuberculous infection, during which it is of the utmost importance to recognize the disease, in order that proper management may be instituted. In order to arrive at an early diagnosis, every symptom and clue must be canvassed, not only in itself, but in its associations. A symptom may be of little volume alone, but occurring in association with others it may form the ground for a positive conclusion.

Of the early symptoms, the most constant are some loss of vigor, with slight disturbance of temperature. The recurrence of fever, even of a fraction of a degree above 99 degrees F., every afternoon without apparent cause, should excite the gravest suspicion. The elevation may not be constantly found, but its frequent occurrence should arouse apprehension. The temperature in tuberculous patients is peculiarly sensitive to disturbing influences; it is well, therefore, in doubtful cases, to take it after a walk or excitement of any kind. If with the elevation of temperature there are also such symptoms as debility, loss of appetite, slight loss of weight, and anemia, there is usually but one interpretation to be given. The occurrence of chlorosis, with elevation of temperature, is especially significant. The younger Klebs is said to get the reaction of tuberculosis in all such cases with the use of tuberculin. In all case of amenorrhea, therefore, the possibility of tuberculosis should not be overlooked.

The tendency of anemia is very great. There is usually undue pallor of the mucous membrane, as well as of the skin. As a rule, examination of the blood does not show a reduction of red corpuscles or of hemoglobin in keeping with the appearance of the patient. The condition seems to be a general reduction in the volume of the blood rather than of the corpuscular elements or their pigment. In some cases, in fact, the serum seems to suffer more than the corpuscles, just as it does in many, if not most, cases of profound mal-nutrition or marasmus. In such the blood drop is dark and contains over its five million red corpuscles per c.cm. In these cases emaciation is always decided.

Although the temperature is usually elevated slightly, it is of the utmost importance to remember that instead of elevation it may be depressed, and run a sub-normal course for many days, or even weeks, in succession. This is most frequently observed in those living an out-door life. This occurs probably more frequently in the more advanced cases, and possesses a significance equal with that of a febrile course. To obtain the fullest benefit from the temperature range, it is necessary that it be taken regularly several times a day.

The importance of the temperature is well illustrated in a case

of a farmer whom I examined several times during the last few days. Absolutely nothing could be found wrong on examination of his lungs, but he had lost flesh slightly, also color, and his temperature in the afternoons varied from 99 2-5 to 99 4-5. He has had some cough and expectoration for the last three weeks, but there are no bacilli to be found on repeated examinations of the sputum. In his case I have scarcely a doubt that there is tuberculous infection, and have advised that a test be made with tuberculin.

Rapidity of pulse is an early and characteristic symptom. It may be as suggestive as the disturbance of temperature, and is easily excited by both physical and mental causes. It is of much prognostic value as a rapid weak pulse means danger. This lack of equilibrium is doubtless due to the tuberculous toxine acting as a circulatory depressant and vaso-dilator. There are many other causes that render the heart easily disturbed, but none more frequent than tuberculosis.

In some cases the first sign of the disease is hemoptysis. In many of the cases it is quite impossible to find any physical sign of disease of the lungs, yet the occurrence of such hemorrhage without obvious cause is almost sufficient ground for a diagnosis of tuberculosis. We meet with many cases of hemoptysis from time to time in whom no other symptoms of tuberculosis ever occur, and yet the cause in them is almost certainly tuberculous. It is worthy of remark that such attacks are rare in those leading an out-of-door life.

Occasional cases are met with in which early hoarseness is the first to attract attention. With this there is usually very slight cough, of which often the patient is not cognizant. In these cases it has been recommended to give iodide of potassium in moderate doses for a few days in order to increase expectoration so that tubercle bacilli may, if the case is tuberculous, be demonstrated in the sputum. Its use may also enable us to discover fine crepitation in the apex of the lung.

Pleural affections are, in a good many cases, the first signs of tuberculosis. They are nearly always secondary to an infection elsewhere, and may be excited by direct eruption of tubercle through the membrane from lung or glands, or by the toxine circulating in the blood. Local dry pleuritis are the most common, causing usually sharp lancinating pains in the chest. Pain in the chest, however, in the majority of cases of tuberculosis, as in other anemic conditions, is not inflammatory, but rather neuralgic. Large pleural effusions are not infrequently met with as the first sign of tuberculosis, and may long resist treatment. In a lady in a western town whom I saw in November, 1899, the effusion was so rapid that aspiration was necessary every five or six days

for many months. No focus of tuberculosis could be discovered although the effusion was doubtless tuberculous. She improved in health for some time, but has again declined of late.

Among the earliest symptoms in a few cases must be mentioned loss of appetite and derangement of digestion. In such cases it is wise to note the condition of nutrition and the state of temperature. Such derangement of digestion itself does not give rise to elevation of temperature, unless it is due to a catarrhal inflammation of the digestive tract.

While in the great majority of cases the development of tuberculosis is characterized by some or all of these symptoms, it must not be overlooked that occasionally the disease is met with in stout, robust men, who show no depreciation of health or strength, or loss of flesh, and yet the physical signs may be unmistakable and bacilli be found in the sputum.

In estimating the possibility of tuberculosis in any case, due account should be taken of the hereditary tendency and former conditions of life, including the probable exposure to contagion. From time immemorial great importance has been attached to the family history; hereditary tendency was given the first place in the causation of tuberculosis, but with our knowledge of the contagiousness of the disease came also our doubt of the prime importance we were wont to attach to it. It now takes quite a subordinate place in the etiology of the disease. The disease is rarely inherited, and no matter how bad the family history of a child may be, it is certain that it will never become affected with tuberculosis if its environment is healthy and its atmosphere free from the ubiquitous bacillus. It is equally true, however, that no matter how vigorous a constitution the child may inherit, the liability to contract the disease is great if exposed to the contagion under favorable conditions for its development. We have all met with heart-rending instances of whole families, in which for generations there had been no case of tuberculosis, being wiped out by the return to the family fold of one who, during an absence from it, had acquired the disease. An instance of this kind came under my observation not long ago; a brother who had been absent for a year or two came home ill with pulmonary tuberculosis, from which he died within a year. A sister who nursed him became affected before his death. She in her turn was nursed by her mother, who acquired the disease before the daughter's death, and so the disease progressed until one after another the whole family of the mother, two sons and three daughters, had died of tuberculosis, which was introduced into it by the infected brother. Therefore, in estimating the probability of tuberculosis in any patient, his previous life, with its exposures to contagion, his work, his dwelling, his associations and his habits should be well

canvassed. The family history is chiefly of importance, as it affords evidence of exposure to contagion.

Before referring to the physical signs to be sought for and interpreted, let me say a few words about the methods of examination. In my clinical teaching, I fear I often weary my students with the reiteration of the importance of inspection in the examination of patients. Our eyes are by far the most important organs through which to acquire information, and in physical examination I venture to say they are the least systematically used. Excellent physicians often fail in diagnosis because they do not use their eyes to advantage. In no class of cases is it more important that care should be taken in inspection than in pulmonary tuberculosis. All males, and with due exceptions females also, should be stripped to the waist, and placed at ease so that a good light shall flood both sides equally. Then the formation of the chest can be observed, careful note being made of any irregularities, retractions, the expansion, the unison of movement of the two sides, the action of the intercostal spaces, the position of the cardiac impulse and of Litten's diaphragm phenomenon.

Palpation and percussion do little more than confirm the information obtained by inspection, as in these early cases fremitus and resonance are yet unaffected.

In auscultation, careful study should first be made of the rhythm and character of the respiratory sound and the length of expiration. Not rarely the first deviation from the normal discovered is a slight weakening and roughening of the respiratory resound, with some prolongation of expiration. This change may be sufficient for the diagnosis, especially if associated with the constitutional symptoms already referred to. The absence of physical signs in these early cases is due to the fact that disease begins deep in the apex of the lung, and is therefore surrounded by a thick layer of normal lung tissue, through which abnormal sounds fail to be conveyed.

Recently the X-Rays have been used for purposes of diagnosis. Deposits in the apex of the lung are shown by the occurrence of a dark shadow, but the deposit requires to be fairly extensive to make the shadow sufficiently deep to be of practical value. The movements of the diaphragm can be observed by the rays, and when one lung becomes materially diseased the expansion of it is restricted, so that the diaphragm does not descend to as low a level on the affected side as on the healthy. This, however, also requires considerable advance in the disease, when the condition can usually be distinguished by physical examination.

Finally, I would emphasize the importance of repeated examinations of sputum. Not rarely patients say they expectorate nothing, and yet if a receptacle be provided they manage to secure

a pretty fair quantity within the next twenty-four hours. As a rule, in the early stages no bacilli can be found, because ulceration in the bronchi has not yet taken place. Any sputum that can be obtained, however, should be examined with the utmost care.

There still remains a resort to tuberculin to confirm or disprove our suspicions. As to the wisdom of using the tuberculin test for the diagnosis of tuberculosis there is some difference of opinion among competent observers. Led by Virchow, a strong protest was entered a few years ago against its use, on the ground that it might light up latent foci and lead to a rapid dissemination of the infection. On the other hand, many careful observers who have had large experience assure us that with the small doses necessary for diagnostic purposes the fear is groundless. Dr. Trudeau, of Saranac Sanatorium, told me a few weeks ago that he had continued to use tuberculin since its introduction without its having had any deleterious effect in any case, and that it had never failed to determine the existence of tuberculosis in doubtful cases where it occurred. He has found it invaluable in determining the existence of disease in cases in which otherwise a positive diagnosis could not be made. In the light of this experience one need not hesitate to use it to determine the existence of a disease whose early recognition is of such paramount importance. One, or one and a half mgms. is usually sufficient to begin with; if there is no reaction the dose may be doubled until a dose of five or at most ten mgms. are given; the absence of a reaction then being deemed sufficient to exclude the existence of the infection. The patient should be observed for a day or two before to determine the natural course of temperature, then the dose given in the evening will, if the reaction occurs, show a disturbance of temperature in the morning. The injection may be repeated every day or second day until a conclusion is reached.

Of the treatment of tuberculosis I will only refer to the general principles. For this disease there is no known specific remedy—none that has any direct influence on its progress. We have, therefore, to depend chiefly on developing vigorous health; this is not only the most effective means of cure, but also the only protection against further infection. Nature unaided cures tuberculosis daily. The history of all races of men and animals bears testimony to the fact that an out-door life is a positive barrier to the development of the disease. The North American Indian, so long as he lived on the open plains, sleeping in the open or in his tepees, was practically a stranger to the disease, but with their housing has come a terrible death-rate among them from tuberculosis. The disease is unknown among the animals that roam over the plains, and also among the cattle that are unhoused in winter. It is practically never met with among the cattle of

the Scottish Highlands. These facts are eloquent in suggesting to us the proper management of people in the prevention of the disease as well as in cure of those who have contracted it.

By out-of-door life we mean the constant living in fresh air day and night irrespective of weather. We are frequently asked by the affected or their friends if night air is not bad? I am in the habit of responding that indoor night air is usually very bad. No kind of weather should prevent a case of any kind of tuberculosis being in the fresh air—much less a suspected case. A patient who is suitably clothed cannot take cold. This is a difficult lesson to teach people in general. There are few houses in the country to which fair arrangements as to shelter cannot be made, in which one can sit, or even sleep if necessary, sufficiently protected from inclemency of weather. These remarks apply to cases in all stages—it is of the early we are speaking to-day. Nothing should be allowed to interfere with *their* living in the open air. In many of them the mode of life or occupation may be changed, so as to give the fresh air life that is needed. I have sent many young men in such conditions of health to the prairies to follow ranching, or other occupations they can obtain there, and the results have invariably been gratifying. One young man with well marked excavation in one lung, and of course some disease in the other, went out beyond Calgary seven years ago to a ranch; he has recovered vigorous health, and has now a large ranch of his own. A young physician went out four years ago with tuberculous ulcer of the larynx, but without any symptom of disease of the lung; he started practice out there, has completely recovered, and is spending this summer taking a post-graduate course in Europe.

Many, however, especially females, cannot take advantage of such favorable conditions, but must remain at home and earn their daily bread; but even in the worst of these cases, in the country especially, much can be done to improve their condition by securing the freest possible fresh air life, day and night. In the cities the conditions are very different; we are constantly meeting with young women particularly, in the early stages of the disease, who, if they could be placed in favorable surroundings, would make rapid recovery; but for lack of such conditions usually die before the advent of the second winter. These are the cases that stand in such great need of treatment at sanatoriums where they can be kept in fresh air, and be carefully looked after.

For such symptoms as loss of appetite, malaise, rapid pulse, cough, and the night sweating that so often results from debility, nothing that we know of does so much to relieve as fresh air. The more pleasurable surroundings in which such fresh air is enjoyed the greater the benefit. We all know how much greater a holiday

with exhilarating accompaniments benefits us than a dull one. Many dyspeptics are able to eat and digest much more away from home than at home, even when the supplies at the latter are as good, if not better, than those obtained abroad. The mental attitude has very much to do with the results obtained.

Rest is imperative in all cases of tuberculosis in which the temperature is above normal. Exercise is of importance, and should be judiciously taken, with due regard to its effect on the temperature and pulse. If these are materially increased by it the exercise is beyond the powers of the patient. The diet should be as generous as can be digested, in febrile cases the heaviest meals being given in the early part of the day, as the temperature is usually normal then. In the way of treatment the first place should be attached to whatever will improve the powers of digestion, and everything that tends to disturb this function scrupulously avoided.

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REMARKS ON MODERN VIEWS OF THE SOURCES OF
TYPHOID FEVER.*

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What, it may be asked, are the modes of conveyance of the typhoid fever poison into the human body? It appears that isolated cases and epidemics of this disease are alike to be attributed to pre-existing cases of typhoid fever, and this fact presupposes that the germ of the disease, known as Eberth's bacillus, is conveyed through some channel from the sick to the well. The poison leaves the body of the patient through the feces and the urine, which are practically the only primary sources of infection, and contain the bacillus of Eberth in great numbers. "In the vast majority of instances," says Anders ("Text-Book of the Practice of Medicine," 4th edition, A.D. 1900), "the poison is transmitted from those affected with the disease to those in good health through the drinking water supply."

Typhoid infection of a water supply may be direct or indirect. Direct infection occurs through the entrance of ordinary sewage containing the Eberth bacillus, or of feces or urine discharged along the banks of a river, creek, or lake—for example, by persons suffering from the disease, or who are convalescing from it. Indirect infection occurs from discharges of infected feces or urine deposited in or upon the soil, and subsequently washed by melting snow or rain into wells, creeks, or other bodies of water. Harrington ("Manual of Practical Hygiene," A.D. 1901) expresses a modern view of this subject as follows: "Ordinary sewage pollution is not sufficient to bring about an outbreak of typhoid fever, nor will specific pollution necessarily always be followed by the occurrence of cases. The Eberth bacillus has only a limited tenure of life, and in the absence of conditions favorable to its existence it may perish before it reaches the consumer. Moreover, the number present may be very small, and the effects produced so slight as to occasion no great notice. It is to be borne in mind that not every mouthful of a polluted water supply contains the organism, and that not every person to whose system it gains access must necessarily sicken with typhoid fever."

Until quite recently it has been supposed that the Eberth bacillus had its origin only in the *feces* of pre-existing cases; but it is now known that this is an erroneous view. It is also known

* Read at meeting of the Executive Health Officers of Ontario, Brantford, June 25th, 1901.

that this bacillus exists in the fecal discharges during only the early stages of the disease—to the twentieth day, or perhaps even somewhat later. Petruschky has shown (*Centralblatt für Bacteriologie und Parasitenkunde*, 1898, XXIII., No. 14) that the urine of a typhoid case may contain millions of living bacilli of Eberth in each cubic centimetre, and that they may be found for many weeks and even after convalescence is well established. They may appear as early as the fifteenth day, when they are perhaps no longer demonstrable in the feces.

Dr. Mark W. Richardson (*Journal of Experimental Medicine*, May, 1898) found them in very large numbers and in practically pure culture in the urine of nine out of thirty-eight patients. They appeared late in the course of the disease, and continued to be eliminated in several of the cases after discharge from the hospital.

These observations of Petruschky and Richardson have been confirmed by F. Neufeld (*Deutsch. Med. Wochenschrift*, 1900, No. 51, p. 284). In twelve cases, which he studied with the object of obtaining information on this point, he found three who had this special form of bacteriuria.

He states that the urine containing the Eberth bacillus presents the following characteristics: The bacilli appear suddenly in the urine, and in such numbers that in the space of one day the urine becomes thick and clouded. There is no disorder of micturition, and there are no symptoms of cystitis. The urine remains acid, and, in addition to numerous typhoid bacilli, almost always in a state of pure culture, sometimes contains a small quantity of pus; there is no albuminuria connected with this bacteriuria, and if such a condition were present in the patient before the onset of typhoid fever, it is not increased.

The bacteriuria occurs sometimes during the second or third week, most generally, however, during convalescence, and lasts for several weeks, months, or even for many years. It is not dependent on the gravity of the typhoid infection, and is met with in about 25 per cent. of the cases.

Neufeld further remarks that urotropin makes the urine of these patients clearer, and diminishes the number of typhoid bacilli; but the bacteriuria reappears as soon as the patient discontinues the medicine, which for this reason should be administered for many weeks or even months. Urotropin has no prophylactic action on the essential cause of the bacteriuria. Neufeld in publishing his report wished to draw attention to the endemic propagation of typhoid fever by the urine of typhoid fever cases. The danger of contaminating water supplies seems to him to be very much greater from infected urine than from fecal matters.

It appears, then, that an apparently well person is capable of

infecting a water supply, to a greater extent and with less optical evidence, or none at all, by a discharge of urine into a water course, than an evidently sick one by a deposit of his feces in it or upon its banks.

Confusion occasionally arises in the minds of observers because a water supply, which has been certainly deemed to be the cause of a typhoid outbreak, is after a certain time used without causing fresh outbreaks. The life history of the Eberth bacillus throws a certain amount of light on this phenomenon. Assuming that the Eberth bacillus has been washed into a well from the surface of the ground, Anders says, in *Text-Book of the Practice of Medicine*, A.D. 1900, that "it may retain its vitality for from seven to fourteen days in the water, disappearing from the same on account of the presence of saprophytes," and this is the current view almost universally received. Professor Chantemesse, of Paris, in an article published in *La Presse Medicale*, June 5th, 1901, denies the correctness of the view. He says: "It is not true to state that the typhoid bacillus dies rapidly after it has invaded a natural water supply, even when that supply is impure." Chantemesse has recovered the bacillus typhosus from natural water forty-four days after he had placed it in this water. He claims that this bacillus, when introduced into potable water, does not lose its vitality and disappear from the same on account of the presence of saprophytes, but that it becomes weaker, less virulent, and less able to cause infection, assuming itself a saprophytic form. All the same, this weakened bacillus can be strengthened and regenerated in water, and can be made to resume a pathogenic role. Accepting this explanation, it is reasonable to conclude that a water supply receiving occasional pollution from Eberth bacilli at lengthened intervals might only prove infective for a few weeks on each occasion, after the introduction of these microbes; but if there happened to be a persistent contamination of the drinking water with Eberth bacilli, derived from typhoid dejecta (liquid or solid), an epidemic or endemic of typhoid fever would be caused in those who used that water supply.

There can be no doubt that pollution of a well by human dejecta leaking into it from a privy pit (direct), or washed into it from the surface (indirect), is believed to be an efficient cause of typhoid, and the water is the immediate source of the infection. Reports appearing in the transactions of the Provincial Board of Health of Ontario for the past nineteen years refer to the fact that a well has become polluted with sewage, because the upper surface of the land is of sand, with an underlying clay, at a depth of from ten to twenty feet, or with clay on top, a water-bearing gravel belt beneath, and a substratum of blue clay at a depth of eight or nine feet;

as at Stratford. It is contended, and generally accepted, that excretal liquids drain from the privy pit through the sand or gravel to the well, which reaches to a greater depth than the pit. This theory of infection is open to the objection that filtration of polluted water through sand is a recognized means for destroying bacterial organisms, and that while chlorides, sulphates, phosphates and other salts contained in sewage may be present in solution in the well water, Eberth's bacillus may not be present. This objection might be disposed of by emptying a bag of salt into a suspected privy pit and then testing the well water quantitatively for chloride of sodium. If salt will pass, then the excretal liquids are strained through a rather coarse filtering medium, and Eberth's bacillus can also pass. The well-known epidemic of typhoid at Lausen, Switzerland, demonstrates the soundness of this test. In that epidemic "everything pointed to a direct connection between the impounded water of the contaminated brook and the spring a mile or more distant on the other side of the ridge, and its existence was established by dumping about a ton of salt into the brook, and noting its speedy appearance in the Lausen spring. As a very large amount of flour deposited at the same place gave no evidence of its appearance, even in traces, it was proved that the water passed through a coarse filtering medium rather than through an open underground passage" (p. 365, "Manual of Practical Hygiene," Harrington). Where the filtering medium lying between a privy and a well would be of gravel, there ought to be, and probably is, a free communication between them. It would certainly save much time and speculation on the part of the reporter, if the salt experiment were tried in cases of incriminated wells. If salt passes there is good reason to believe that the Eberth bacillus will pass, and if salt will not pass the contrary may be concluded. Owing to an improved technic, the outcome of fifteen years of work on this subject, Chantemesse states, in the paper already quoted: "The method enabling one to discover rapidly the presence of the typhoid bacillus in water, and even to note if it has been present there for a long time, enables the hygienist to examine a suspected supply before it has done harm, or at least at the start of an epidemic. It especially gives the indication to empty a well, or to allow a piped supply to run off, if the presence of the typhoid bacillus has been demonstrated in the one or the other."

But even though the leakage of the Eberth bacillus downwards from a privy pit into a well be effectually barred, there is proof that it must have been present in the water supplies of farm-houses, where the earth closet was used, and where the dejecta were so situated on the surface as to be readily washed into the well. Thus, in the Report of the Provincial Board of Health, 1898, p.

28, Dr. John J. McKenzie describes an outbreak of typhoid fever in the townships of Hamilton and Hope. There were in all 21 cases and one death. The well water used was incriminated. The reporter says: "The well is situated in the yard near the kitchen; it is about thirty feet deep through clay, and has a good supply. It is not known to go dry. Fifty-seven feet away is the privy-box, a dry-earth affair, which is, however, only cleaned spring and fall. About the same distance is the stable, and the ground around the well is in a very filthy condition." It is not stated that the dejecta of the first cases were deposited in the "dry-earth affair" and subsequently washed into the well; but the inference is that way, since the dirty stable, dirty "dry-earth affair" and polluted surface about the well were of ancient date. Reporting an outbreak of typhoid in East Zorra township, (Report P. B. H., 1896, p. 60), Dr. McKenzie says: "Adjoining the old log house was the privy, which was apparently not a pit or, if a pit, had been gradually filled up. If meant for a dry-earth closet, there was no provision for cleaning it, and it did not look as if it had been cleaned for some time. . . . The corner of the old house next the privy was the room evidently used for cooking, as the stove was there, and portions of the wall towards the privy were wanting, so that there was free access for flies from the privy to the kitchen."

Thus Dr. McKenzie, as early as 1895, expressed the opinion that the Eberth bacillus could be transmitted by flies from dejecta to food, and his theory that the epidemic in question was caused in that way may be correct, though unsupported by scientific evidence. It seems equally probable that the dry-earth closet level with the surface would be equally efficient in supplying Eberth's bacilli, which could be washed by a shower of rain into the well (46 feet away). The water of the well was used for cleaning cooking utensils, etc. As the log house mentioned above was used as a kitchen and milk house, the milk pails, etc., could be infected by the water. The donor of the Eberth bacillus would probably be the daughter, Eugenia, "who did not take the disease, stood the whole strain of nursing, but who had a history of a severe *typhoid a year before*." Another piece of evidence is the following: "I have just returned from visiting a lumber camp on Lake Wahnapiatae, about eighteen miles from here. The camps are built on a shelving bank, chiefly rock. The excreta of human beings, hogs, horses, are washed into the lake, the cook camp being placed close to the lake from which the water supply is taken, about six feet from the shore. You will not, therefore, be surprised to learn that there are cases of catarrhal enteritis" (P. H. B. Report, 1896, p. 12). The expression "catarrhal enteritis" is probably intended to be

satirical, and a reflection on the diagnosis of some other physician, the writer probably intending to say that in his opinion they were cases of typhoid, and that they were caused by the use of infected lake water. The interesting point is that the infection was washed into the lake from a shelving rocky bank. Anders reports the Plymouth, Penn., outbreak as follows: "In the spring of 1885 a most instructive though deplorable epidemic occurred in Plymouth, Penn., a town of 8,000 inhabitants. At first the nature of the affection was not recognized, and before it ceased to appear twelve hundred persons were affected, with 130 resulting deaths. This epidemic was investigated by Shakespeare and L. H. Taylor, and was found to have arisen from a single case of typhoid occurring in a house on a hill, which sloped toward the water supply of the town. This patient was ill during January, February, and March, while the ground was frozen and covered with snow, upon which the dejecta were thrown by the attendant. On March 25th there was a considerable rainfall, followed by a sudden thaw, and the water, unable to sink in the frozen earth, ran at once through the various surface channels into a brook, which in turn emptied into the reservoir. Coincidentally with the thaw, the patient had frequent and copious stools, and strangely enough for certain reasons the infected water supply was at the same time more largely drawn upon than usual. On April 10th other cases of the disease appeared, and careful investigation showed that these citizens who obtained their water from other sources than the infected reservoir escaped the disease. The causal relation of surface pollution infecting a water supply is very clear in the Plymouth outbreak.

An outbreak which occurred at Ashland, Wisconsin, in 1893-94, is peculiarly interesting in that, in addition to serving as an illustration of the danger of using the same body of water as a place for the disposal of sewage, and as a source of drinking water, it was made the basis of an action at law, which established the liability of water companies and municipalities in cases of sickness and death caused by the distribution and use of infected water. The city's supply is derived from an arm of Lake Superior, Chequamegon Bay, upon which the city is situated. This bay, which is about twelve miles long, and of an average width of five, varies from eight to thirty-six feet in depth. North of the city, and extending outwards in a north-westerly direction, is a breakwater constructed for the protection of the harbor against northerly gales, and between it and the city the mouth of the water intake is located about a mile from the shore. The sewage of the city is discharged further to the west and south. The currents in the bay carry the sewage toward the breakwater and over the mouth of the intake. This condition of affairs was

brought to the attention of the water company by the health boards of the city and state repeatedly, but without results. That the water was polluted was evident on mere ocular inspection, for it was often cloudy or markedly turbid. During the winter of 1893-94 typhoid fever made its appearance in the city, and from the initial cases a disastrous epidemic developed, which led to the establishment of a model filtering plant. The action at law referred to above was brought by the widow of one of the victims. In evidence it was shown that he lived continuously in Ashland, and drank no water other than that supplied by the water company; that previous to his seizure the disease had prevailed in the city and that the discharges from the antecedent cases had passed into the waters of the bay by way of the city sewers. The court found for the plaintiff in the sum of \$5,000.

"The position," says Harrington, "held by water as a causative factor in the spread of typhoid fever is such that, paraphrasing a familiar quotation, the student of sanitary matters may say, 'show me a city's statistics of the disease, and I will tell you the character of its water supply.' Pure supplies and high typhoid rates are quite incompatible; the endemicity of the disease in communities of any large size makes equally incompatible the use of sewage-polluted water and low morbidity and mortality."

There can be no doubt that in the spread of typhoid fever milk plays a part only second in importance to that of drinking water. A very great number of epidemics have been traced beyond a doubt to milk coming from farms where cases of the disease have occurred. The contamination is brought about by the hands of the milkers or other handlers who, in addition to their other duties, are engaged in nursing cases of typhoid fever, or by the addition of infected water, or through washing pails, cans and other utensils in such water. In the Report of the Provincial Board of Health, 1886, p. 23, Dr. Griffin, M. H. O., Brantford, says of an outbreak of typhoid fever in different families: "It was found in the second and third houses attacked, in which were seven of the ten cases, that milk was obtained from the same salesman, and this milk was found to have an unpleasant taste. On visiting the dairy, it was found that the well from which water was got for rinsing the utensils was only eight or nine feet from the cow stable and from a large heap of manure, in such a position that it was impossible that the well should not be contaminated."

Dr. James B. Russell, M. H. O., Glasgow, also mentions that impure well water extended pollution to the milk, causing, in a population of 905 people living in Fergushill and Benson, 100 cases of enteric fever during two years.

As is the case when outbreaks occur from polluted water, when attention is drawn to the possible cause, the bacteriological evi-

dence has not been obtainable, the conditions having changed during the period of incubation. The discovery made by Chantemesse will, however, remove this difficulty.

"That the bacillus of Eberth can retain its vitality in milk, and even in sour milk, has been definitely settled. Hein found the organism in sour milk at 55-64 F. after thirty-five days, but not after forty-eight. Hesse has found it in sterilized milk after four months. Drs. Frankel and Kester, having reason to believe that the unusual amount of typhoid fever at Hamburg during the summer of 1897, was due in part to infected buttermilk, undertook the study of the question whether the bacillus typhosus can exist in that fluid. Obtaining some samples, they first investigated the number and identity of the contained bacteria, and learned that while the number varied widely the species were always about the same. Finding no pathogenic organisms, they sterilized specimens in test-tubes a half hour a day for three days, then planted the typhoid bacillus in them and kept them at different temperatures—on ice, and at 22 and 37 C. (71 3-5 and 98 3-5 F.).

"Loops were taken from each from time to time and planted, and each yielded positive results. The specimen kept at room temperature was under observation nine days, the others were not examined after the third. Then specimens of fresh buttermilk containing all its bacteria were planted, and kept under the same conditions, and from them the same results were obtained. Yet there was this difference, that there was always a diminution in the number of pathogenic organisms, and this was the more marked and sometimes very rapid with increasing temperatures" ("Practical Hygiene," Harrington).

In 1896 the French Academy of Medicine took official notice of the connection between infected oysters and typhoid fever, and came to the conclusion that suspected oysters may be made safe by removal for several days to pure sea water, away from all possible chance of contamination. According to Dr. Klein, the time which should elapse is at least sixteen days. He found that the bacilli in typhoid-contaminated oysters were harbored from four to sixteen days after removal to clean water. Dr. Newsholme, in *Public Health*, September, 1898, after a thorough investigation of the subject, concluded that no less than 30.7 per cent. of the total number of cases of typhoid fever in Brighton, England, in 1897, were definitely traceable to the eating of sewage-contaminated oysters or mussels, and that the percentages in other years were 38.2 in 1894, 33.9 in 1895, and 31.8 in 1896.

Other solid forms of food, such as salads, celery, fruits, may be contaminated by infected water or dust, or by the fingers of the nurse or the patient. Instances of contamination from such sources must, however, be rare.

During the Spanish-American war in 1898, it was thought that the Eberth bacilli were conveyed from the latrines directly to the victims or to the kitchens and mess-tables by swarms of flies (Anders).

A similar observation has been made to myself by an official engaged in a railway construction camp in British Columbia, in which the laborers were attacked with typhoid fever, although the water supply was reported to be quite pure.

The presence of fecal dejecta in open trenches connected with camps, during hot weather, when flies abound, must necessarily expose the food to grave risk of infection with typhoid fever. Among large bodies of men drawn from different parts of a country in which this disease is very generally distributed, it is almost inevitable that there will be some who will introduce the germ.

Finally, we must not forget that typhoid may be conveyed by direct contagion. The disease is occasionally contracted by nurses and physicians. Laundresses, who are obliged to handle soiled clothing, are affected frequently. Anders says that "during the presence of an epidemic in 1897 in Montgomery County, Penn., house epidemics occurred, in which contamination of water or food could be excluded with reasonable certainty."

As the experiments of Dr. Eduardo Germano negative the transmission of typhoid fever by dust, blown about by the wind, I shall not mention them.

"Within the past decade the water theory of typhoid infection has been so thoroughly proved as the chief, if not the sole, cause of extensive outbreaks, that interest in Pettenkofer's theory has fallen off, and its supporters are now few in number" ("Practical Hygiene," Harrington).

Sewer gas is not now regarded as of much importance in causing an outbreak of typhoid. If house plumbing be defective, Eberth bacilli may escape into the atmosphere of homes. Sewer gas of itself, is often unpleasant, and though it is deleterious, it cannot of itself cause typhoid fever" (Bergey and Abbott).

Pharmacology and Therapeutics.

IN CHARGE OF
A. J. HARRINGTON, M.D., M.R.C.S.(Eng.)

INDOLENT VARICOSE ULCER OF THE LEG.

ELIZABETH B., aged about fifty, came under my care about February 1st with a severe ulceration of the right leg, for which she had been a sufferer for some years, rendering her almost unfit for work of any kind. On examination, I found the entire leg from the knee down very angry and red, the veins being greatly varicose, and knotted in several places. There was, about 1 1-2 inches above the internal malleolus, a large unhealthy-looking ulcer, irregular in outline, with thick, everted and swollen edges. I found the swelling would pit upon pressure, due to an edematous condition present from a point midway between the knee and ankle to the metatarsal region. Unlike the tubercular ulcer, the edges were not undermined, but sloped gently to the floor of the ulcer. The floor was covered with large, unhealthy granulations, which bled quite freely on pressure. The ulcer was surrounded, in fact the whole lower leg was covered, by eczema. The ulcer was about two inches by three inches in diameter. My patient told me that she had used everything in her power to heal the "sore," but had found it impossible to "get it any smaller." She had consulted several doctors, but evidently without avail, and came to me to ask whether it might not be wise to have her leg amputated, the pain at most times being excruciating. On questioning her about how the ulcer started, and what it looked like at first, she said that it started like a reddish ring, and "worked towards the centre," a condition which in varicose ulcers is quite common, the destruction of tissue beginning at the margin of the congested area, and advancing towards the centre. In this case, on closer examination, it was easy to notice that the veins ran beneath the ulcer, and from its upper margins to the inner border of the popliteal space. There was a condition present of passive hyperemia, all the surrounding tissues being saturated, so to speak, with the thin serum oozing through the walls of the smaller veins and capillaries, causing the severe edema present. The extensive pigmentation of the skin was due to the exudation of red corpus-

cles, and with the nutrition of the part enfeebled, it is little wonder that the slight blow which, as in this instance (tripping upon the stairs) originated the trouble, first by causing an abrasion of the epidermis, the minute wound gradually developing into an ulcer of considerable size; infection then taking place by bacteria invading the exposed surfaces, and the surrounding parts becoming infiltrated with leucocytes. There was a certain amount of phlebitis also present in this case, making her suffering all the more severe.

The question then arose, what was to be the form of treatment? I ordered my patient to bed, and told her that she might expect to spend the following three or four months anyway on her back. I elevated the leg upon two or three hard pillows, in addition to raising the foot of the bed itself upon two bricks. I administered a saline every morning at the start. As she had a rheumatic diathesis, I put her upon the salicylate treatment, using drachm doses of the elixir of compound salicylates and manaca three times daily. I scarified the bottom of the ulcer and the skin, taking care that each cut went through the deep fascia. This caused a certain amount of hemorrhage, and thus relieved the severe pains, which were more prevalent at night. The incisions permitted contraction to take place and allowed granulations to sprout in them, thus assisting the absorption of the exudate. Two days after scarification, I scraped the ulcer with a curette until I reached sound tissue. I dressed with iodol once daily. At first healing seemed to become established, and I had hopes that everything was progressing. The patient said that she had less pain in the leg, and was decidedly more comfortable than she had been in years, sleeping better at night and eating better. The eczema began to disappear at the same time. After instructing her how to do the daily dressing, I gave up calling oftener than once a week. After a month had elapsed, I got a little impatient, and changed the dressing to equal parts of boric acid and bismuth. Later I applied sulphate of copper to the granulations, as they seemed a little exuberant, following that application for a few days with hot lead-water and laudanum. No progress took place in the healing process at all, the sore seemingly remaining stationary in size, as well as in depth. At various times I used the actual cautery. I applied silver nitrate daily (10 or 15 grains to the ounce). I strapped the edges with adhesive plaster, but all seemed of no avail. At the end of the fourth month I commenced using poultices of antiphlogistine, and, after healing was established, dusted on special protonuclein powder. I took the former, and with the ordinary spatula, applied it warm to the entire leg from the knee to below the ankle joint. I put it on about the thickness of an eighth of an inch all over, afterwards covering the leg with heavy

cotton. In thirty-six hours it peeled off like putty or a banana skin, leaving the skin beneath clean, and with a decidedly less angry appearance. I reapplied antiphlogistine three times a week and kept on doing so for just six weeks. At the end of that time, the ulcer had almost closed over, and I from that date used an ordinary gauze dressing, on which was dusted special protonuclein powder. To-day the patient is well and going around without suffering any pain. It seemed to me that antiphlogistine acted as an antiseptic, soothing ointment, and by its hygroscopic powers reduced the edematous condition of the leg to one of a normal, rapidly-healing granulating surface.

THE TREATMENT OF GONORRHEA WITH ICHTHARGAN.

DR. MORITZ FURST,* of Hamburg, reports the results which he obtained with ichthargan in the treatment of gonorrheal urethritis. He employed it in 75 cases, both in dispensary and in private practice. He says that in spite of the superabundance of antigonorrheal remedies, we have a perfect right to investigate any new compound, if its chemical composition is of such a nature as to warrant the belief that it will prove effective in the treatment of that obstinate affection. That ichthargan—a combination of the well-tried and proven silver nitrate with the bactericidal, siccative, and anodyne ichthyol—is such a compound, theoretically at least, no one will deny. And practical results fully justify the *a priori* expectations.

Of the 75 cases treated by the author, 26 were first cases, while 49 were suffering from the second, third, etc., attack of gonorrhea. Of these 6 were cured in from 5 to 8 days, 24 in one to two weeks, twelve in three to four weeks, and 13 in more than four weeks. Of the last 13 cases, the author considers four cases not cured because they still have a slight discharge, though free from gonococci. All the other cases were entirely cured.

The ordinary method of using the ichthargan was by means of injection. The patients were directed to use solutions of 1-3rd to 1 grain of ichthargan to 7 oz. of water. The stronger solutions were given in the beginning in acute cases with purulent discharge full of gonococci; the weak solutions were used toward the end as an astringent. The patients repeated the injections 4 to 5 times a day, after urination, and they were instructed to retain the solution for 5 to 10 minutes. In cases in which the posterior urethra was affected, 6 to 10 drops of a 3 per cent. ichthargan solution were instilled by means of Guyon's urethral syringe.

* Deut. Med. Wochensch., 1901, No. 14.

The superiority of this solution over nitrate of silver was at once apparent, as the pain was much less, and the constant irritation and desire to urinate which are produced by silver nitrate, were absent. The author also used ichthargan in the form of suppositories, made up with cacao butter, and containing from 3-4th to 1 1-2 grain of ichthargan each. As a prophylactic after suspicious coitus, the author advises the instillation of 3 to 4 drops of a 10 per cent. solution into the fossa navicularis. The author considers ichthargan, on the whole, a most excellent antigonorrheal, greatly superior to protargol, with which he has also had extensive experience.

In conclusion, Dr. Furst calls attention to the fact that, taking into consideration the high percentage of silver in ichthargan—containing, as it does, 30 per cent. of silver, while protargol contains only 8 per cent.—and the potency of the drug, which makes even very weak solutions effective, it is the cheapest of the organic silver compounds used for antigonorrheal purposes.

COCAINE MURIATE IN WHOOPING COUGH.

THIS is one of the most useful drugs which has come before us in many years for this most troublesome complaint. I have used cocaine since 1895 in this disease, and it has given me most satisfactory results. My attention was first called to it by an article in the *Lancet*, June 8th, 1895, by Drs. S. Russell Wells and L. J. Gerard Carre. The usual dose to begin with is, at six months of age, 1-16 of a grain three times a day, and gradually increase up to the required influence of the drug, or to toleration. For an infant at one year, begin with 1-12 of a grain three times a day. For a child 3 years begin with 1-5 or 1-4 grain three times a day, and as before increase to 1-2 grain three times a day, or more. In adults, begin with 1-2 grain and increase to one grain. A great deal has been written regarding the dangers of cocain muriate, but I have seen no alarming symptoms beyond a feeling of ecstasy in one patient from using a 6-grain rectal suppository, and in several children I have noticed, or my attention has been called to the fact by the parents, that the child has seemed very talkative after its administration.

The distressing vomiting ceases after the first dose usually. The paroxysms are lessened in severity, and are noticeably much further apart, and the disease is usually aborted in from two to three weeks. The most satisfactory result is obtained in nearly every case from the administration of the first dose. In the case of children, I usually give a subsequent course of syr. phos. comp.

A. J. H.

Selected Articles.

LINEN UNDERWEAR.*

BY DR. HENRY W. ROBY.

LADIES AND GENTLEMEN,—Before discussing abdominal growths I wish to discuss briefly, by way of prelude, some external conditions that have a direct bearing on the internal conditions of the abdomen. Here is the greatest cavity in the human body, with strong, heavy walls behind it and thin, flexible walls in front, where God forgot, to put any bones. That chamber is the great chemical laboratory of the body, in which substantially all the nutritive elements of the whole body are transformed and prepared for absorption into the constructive and reparative processes of the body. And I need not tell you that an even and sustained temperature is always necessary in that great chamber. Anything that contributes to an abnormal temperature either above or below 98 2-5 degrees, or anything that causes frequent fluctuations of temperature is pernicious, and I scarcely need tell you that the matter of clothing has a tremendous influence for or against the healthy activities of the body.

Broadly speaking, from the sanitary standpoint, there are only two kinds of clothing—*good* and *bad*; and in each class there is another division—*outer* and *inner* clothing. For in this day practically everybody outside of the tropics wears two sets of garments *outer* and *inner* garments. And I shall devote this chapter of my discourse to the *inner garment*. I think that even the medical profession has been for many years woefully in the dark as to what is the *very best* kind of under-clothing. The fact is, that we have not, as a whole, given the subject that careful and scientific study that its importance demands. I am unable to recall a single precept from any professor on that subject in the college where I graduated. And it is equally impossible for me to recall any paper or discussion in any medical society meeting that I ever attended on the science of underwear. Is it possible there is no such science? I cannot so conclude, for there is a science in every-

* An inter-current lecture in the course on Abdominal Surgery in the Kansas City Homeopathic College.

thing that concerns life and health. Science is but the ascertained truth and classified knowledge. Truth may be unascertained, but when it is apprehended it becomes science to us. It must be conceded that that kind of undergarment is best that promotes the greatest degree of health and comfort. And I think I can demonstrate to you, and to all thoughtful physicians, the fact that *linen* is the most highly scientific and sanitary of all underwear.

I think I have made a more careful and extended study of the subject than most men, and every fact that I have found points the same way. I have tested, I think, every kind and quality of underwear in the market. I have worn wool in all its varieties and forms of fabrication. I have worn cotton till there was no other variety to try. I have worn shoddy and chamois. I have worn fine silk and satin. I have worn hair cloth huckaback, and all the mixtures of these several materials, but I never found anything to equal pure linen for comfort and health.

The garment most frequently worn and most outrageously unhealthy of all is cotton. The only thing that I know of to commend it is its cheapness. It is cheapest of all to the purse and dearest of all to the person. It is responsible for more colds, coughs, rheumatisms, neuralgias, and more cases of lowered vitality and mal-nutrition than any other fabric. There is nothing more clammy and soggy and chilling and choking to the capillaries than a suit of cotton underclothes. In cold weather it is cold. In hot weather it is hot. In moderate weather it is always damp and sodden, like those who dwell in a London fog. It takes up slowly the sensible as well as the insensible perspiration of the body and holds it in a thin film of dampness next to the skin longer than any other material, and the shock to nerve filaments and capillaries in the skin is profound and prolonged.

Woolen underwear is a grade better than cotton, but it, too, holds the body wrapt in a wet pack most of the time in all but the very coldest weather, and in warm and hot weather it soaks and steams the skin until it becomes exceedingly sensitive and tender, making it exquisitely sensitive to the least change of temperature and prone to many eruptions.

The great disadvantage of all cottons and wools and their several mixtures, is that they all take up moisture from the skin slowly and yield it slowly to the surrounding atmosphere, thus enveloping the body in a wet and chilling envelope, which prevents normal transpiration from the skin. That condition produces abnormal chilliness and contraction of the surface, the blood recedes from the capillaries, the nutritive function is diminished, and if long continued, that condition is reflected to other and deeper structures of the body, and we get that most common and most dangerous and most misunderstood of all human ailments—a *bad cold*.

Did any of you ever see a *good* cold? I never did. Every cold that ever afflicted mankind was contracted through chilling the surface capillaries, shocking the peripheral nerves and depressing the normal calorific state of the body. Nobody ever had an *internal* cold nor any other that did not originate in capillary, chill and depression. A very great number of nutritive derangements follow directly and consecutively upon a chilled state of the surface capillaries. Many a glandular engorgement and consequent enlargement and tumefaction results from the same cause, and many an internal neoplasm has been inaugurated and initialized by an external depression of body temperature. Much of the work of the abdominal surgeon is originated in this way. And so much more depends upon *underwear* than on *overwear* that it is a matter of amazement that more attention and critical study has not before now been devoted to the subject by physicians.

It is a very plain and undeniable proposition that there is always *one best* thing where there is a variety of things to choose from for any specific purpose. So in this matter there is one *best* material for underwear from the sanitary standpoint. And I mean by sanitary, life-giving and life conserving and life prolonging, and if there is one *best* thing for that purpose why do not all men have it and wear it? Because scientific studies have not been directed sufficiently along the lines of personal hygiene.

After years of experiment and study I have no hesitation in proclaiming to you, and to all men, that the best underwear is that which clad the ancients before the discovery of cotton, and when men lived close up to the age of Methuselah. And why? Because linen for the best of reasons is most highly endowed of any known article of apparel with the power of *transpiration*. It can take up more water in a minute or an hour from the surface of the body and pass it on more rapidly and lavishly to the external atmosphere than anything we know of except blotting paper. And blotting paper has not yet been made into underwear.

The function of human perspiration has two physiological objects. One is to keep the skin from becoming too dry for elasticity (but the oil or sebaceous glands in the skin do most of that), and the other is to regulate calorification. When the bodily temperature rises a few degrees, as in active physical exertion, the skin is bathed with a copious flow from the sudorific glands, and the rapid evaporation of that flow cools the body, and that rapid evaporation takes place only when the body is naked or covered by a transpiring garment. To take up that flow and pass it on rapidly to the air is the function of the best garment. Linen does that better than all other clothing.

My attention was first drawn to this fact forty odd years ago in a curious fashion. My father was a frontiersman in the wilds

of Wisconsin as early as 1847, and I have known the dried hams of twenty-five or thirty deer to hang on our cabin walls at one time at the close of the hunting season. Bear meat was also abundant. And one of my father's companions in the chase, was a long-headed old Irishman named Hare, and known the country round as "Uncle Jim."

When winter set in Uncle Jim and father would stock up the big covered wagon with good things to eat and go into the pinery for a hunt, and they often brought back a wagon load of venison and bear meat, with antlers and skins enough to buy the summer's groceries.

And it was noticed and commented on that Uncle Jim wore less clothing than any other hunter in that part of the country, and he always seemed to be in finer physical condition than anybody else. A heavy red flannel shirt, with a loosely-knit flannel "warmus," served him for vest and coat and overcoat, and one day when the thermometer was crouching at twenty degrees below zero Uncle Jim came to our house in his usual garb and I asked him why he never wore an overcoat in winter. He replied in strong Irish accent, "Ah, lad, its me linen that kapes me well enough for two men." "Linen!" I retorted, "where's the linen?" Then he told me he wore a linen undershirt and drawers, with the heavy flannel overshirt and trousers, and never knew what it was to be cold or to have a cold, and that his "warmus" served the place of an overcoat when it was very cold or stormy.

And Uncle Jim was the only man I ever saw in linen underwear until five or six years ago, and during all that time I struggled and suffered on as so many thousands of others did, and do now, with the wretchedly unsanitary underclothing of the country, creeping from one cold to another, and from one discomfort to another, from bronchitis to bronchitis, from pneumonia to pneumonia, and making one catarrh last well on towards a life time. And then one day I made a discovery. I received a circular announcing the manufacture and sale of linen underwear by a doctor in New York. All at once Uncle Jim Hare, whom I had not seen or thought of for years, came to my mind with his quaint brogue saying, "Ah, lad, its me linen that kapes me well enough for two men." I discovered in that circular that Dr. Deimel, of New York, had started the fashion of linen underwear in this country, and as I was just then hunting for something that could be honestly called "sanitary" in underwear, I ordered a supply of the Deimel Mesh linen underwear, and have been clad in it ever since. And with me the problem of "sanitary underwear" has been solved:

Dr. Deimel has done mankind a much greater service than merely recalling attention to the wholesomeness of linen as a companion garment to the skin. He has invented a method of weaving

the linen so as to very greatly increase its normal capillarity and porosity, its absorbing and exhaling power. And as there is no secret about it I may tell you that his process simply involves the weaving of the cloth in open meshes, much in the manner of window and door screens. This porosity and capillarity, plus an affinity for water that makes the good pad of blotting paper take up instantly more than its own volume of water, and almost as rapidly hand it over in impalpable and invisible mist to the atmosphere, which is nearly always thirsty and except in very wet and very cold weather is always sucking enormous quantities of water from man and beast and tree and shrub and field and flower. Apparently the most thirsty thing in the universe is air. It drinks and drinks until it can hold no more, then pours it back on the earth and drinks again until everything has been sucked dry, and we deplore the "great drouth." It is this great absorptive capacity in Deimel linen that makes it come so near to doing for the body what the air does for the earth. It keeps normal moisture in a state of constant transference and it never allows any stagnation. When surplus water stands for more than a short time on any field or meadow the normal fertility of the soil is drowned and lost, and the crops perish. And so, where the human cuticle is subjected to a surplus of moisture it loses its vitality and its normal functions, and disease results.

While linen is the king of all fabrics for undergarments the Deimel Mesh in the woven fabric enhances its transpiring powers very greatly over the close woven, flat web of ordinary linen.

When you wash the face and hands you always wish to dry them quickly, and you never try a cotton towel for that purpose but once if you can get a linen one, on account of its much greater affinity for water, and you never think of using woolen or silk towels because they are not endowed with the power and quality of exosmosis in any comparable degree with linen and the Deimel linen excels all other linen in its exosmotic properties on account of the honey-comb method of its weaving.

Before I began wearing Deimel linen I was always taking cold and suffering all manner of discomforts from it. I always wanted my office temperature up to 80 or 90, winter and summer, and I now know why. The high artificial temperature gave me a dryer air and therefore a thirstier air and one which more greedily wrung or sucked the moisture out of my soggy cotton or woolen underclothes. As soon as I put on the Deimel Mesh linen I could sit comfortably and safely in a temperature of 20 to 30 degrees lower and take no cold, and have no fear of feather-moving draughts. And I enjoyed better general health than I had done for many years. My linen garments cost me several times as much as cotton, but it greatly improved my health and comfort and saved

me 20 per cent. on the winter's coal bill. I was not wasting my own bodily heat trying to dry out a layer of soggy underwear all over the body. Instead of being in a continual state of contraction from dampness and its consequent chilling, my capillaries assumed their normal calibre, and carried plenty of fresh warm blood all over the surface of the body. And comfort was the paramount sensation.

I think that from sanitary and economic reasons we shall yet get back the regime of the ancients who lived from 100 to 900 years. In those halcyon days of the race everybody wore linen. After the primitive fig-leaf and the skins of animals, linen was almost the universal garment of the race for many generations. The Bible is full of allusions to flax and linen. As early as the exodus we find Aaron and his sons set apart and dedicated to the priesthood. Their costumes and paraphernalia are described minutely, and among other things the costumers are commanded to make holy garments for glory and for beauty, of gold and blue and purple and scarlet and *fine linen*. The ephod should be of *fine twined linen* with cunning work, and his curious girdle was to be of *fine twined linen*. His breast-plate was to be of the same. He was to have an embroidered coat of *fine linen* and a mitre of *fine linen*, and the priests were to have *linen* breeches to cover their nakedness.

In Leviticus we are told that the priest shall put on his linen garment and his linen breeches. Both in Leviticus and Deuteronomy the priests received this injunction: "Neither shall a garment of linen and woolen come upon thee."

Samuel ministered before the Lord in Linen, and he tells us that on a certain day Doeg "slew four score and five persons that did wear a linen ephod."

St. John says he saw seven angels coming out of the temple clothed in pure white linen.

Russia is a very cold country, and yet nearly all Russians wear linen underclothing, and are a race of superbly healthy people.

"Shesh" is a very old Egyptian word meaning fine linen. All the old Egyptian mummies we dug up are wrapped in "shesh." And pieces of linen fabric are now in existence that were woven 4,000 years ago. As far back as history shows anything of the habits of the Anglo-Saxons they wore linen under and woolen over garments. And the great Charlemagne, his historian tells us, was dressed after the fashion of the Franks, in linen underclothes.

One writer tells us that the origin of linen underwear is lost in the cloudlands of history, it is so ancient.

So common was linen apparel in England in 1357 that a statute was passed declaring that laborers in husbandry should only wear a blanket and russet and girdle of linen unless they

owned more than forty shillings worth of property. And if, as Swedenborg tells us, human garments denote states of wisdom, and are therefore much spoken of in the Bible, then linen should be the garb of all wise men.—*Medical Arena*.

THE AMERICAN PEDIATRIC SOCIETY.

ANNUAL MEETING HELD AT NIAGARA FALLS, N.Y., MAY 27, 28,
AND 29.

THE following extract is from *American Medicine* of June 8th, 1901.

"A number of interesting discussions took place on the feeding of sick and well children, with special reference, as might be assured, to the question of using cereals and various forms of modified cow's milk.

"One of the most noteworthy papers was that contributed by Dr. Charles Gilmore Kerley (New York), who gave the conclusions drawn from a study of 555 cases of summer diarrhea. Out of the total number, only 10 died. In other words, the death-rate was a little over 2 per cent., and this, the author of the paper said, showed the enormous extent to which mortality from this cause is preventable.

"After explaining that the cases were all taken from the homes of the poor, the Doctor proceeded to say that at the Babies' Hospital they had but one rule of treatment. Irrespective altogether of the duration of the complaint, or of whether the child was being fed on the breast or not, they always cut off the milk at once. Not only did they advise this, but they said positively that the milk must be discontinued for a few days or they would not treat the case."

THE following is an exact copy of an epitaph on a tombstone in a New Hampshire cemetery. It explains itself: "Ruth Sprague, dau. of Gibson and Elizabeth Sprague. Died Jan. 11, 1816; aged 9 years, 1 mon. and 3 days.

"She was stolen from the grave by Roderick R. Clow and dissected at Dr. P. M. Armstrong's office, in Hoosick Falls, from which place her mutilated remains were obtained and deposited here.

"Her body dissected by fiendish men,
Her bones anatomized,
Her soul, we trust, has risen to God,
A place where few physicians rise."

—*Atlanta Journal Record*.



WINNIPEG, MANITOBA, MEETING PLACE OF THE CANADIAN MEDICAL ASSOCIATION FOR 1901.



BOW RIVER FALLS, BANFF, ALBERTA.



CHALET, AT LAKE LOUISE, NEAR LOGAN, ALTA.



LAKE AGNES, NEAR LOGAN, ALTA.

BOW VALLEY, FROM BANFF HOT SPRINGS HOTEL.





BANFF HOT SPRINGS AND BOW VALLEY.



IN THE SELKIRK RANGE.



THE GREAT SELKIRK GLACIER.

125
GREAT GLACIER AND HOTEL, GLACIER, B.C.





MOUNT STEPHEN, FIELD, B.C.



YOHO VALLEY, NEAR FIELD, B.C.



TAKAKKAW FALLS, YOHO VALLEY, NEAR FIELD, B.C.



MOUNT SIR DONALD.



MIRROR LAKE.



BEE-HIVE MOUNT.



VANCOUVER, B.C.

The Canadian Journal of Medicine and Surgery

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Doctors will confer a favor by sending news, reports and papers of interest from any section of the country. Individual experience and theories are also solicited. Contributors must kindly remember that all papers, reports, correspondence, etc., must be in our hands by the fifteenth of the month previous to publication.

Advertisements, to insure insertion in the issue of any month, should be sent not later than the tenth of the preceding month.

VOL. X.

TORONTO, AUGUST, 1901.

NO. 2.

Editorials.

PROMPT DETECTION OF THE CAUSE OF TYPHOID FEVER IN POTABLE WATER.

THE very important paper read by Professor Chantemesse at the regular meeting of the Academy of Medicine, Paris (June 4, 1901), gives the outcome of fifteen years of work in searching for and definitely recognizing Eberth's bacilli in potable water. The new method enables a bacteriologist to discover the bacillus

typhosus, if present in a sample of water, and then to declare if it has been present therein for a considerable period of time.

We shall not endeavor to describe the technic of Chantemesse's method further than to mention that the chief agents used are two different culture media; (1) a medium for producing the proliferation and regeneration of the microbes, and (2) a culture medium for differentiating Eberth's bacilli from the other microbes which may be present in the sample of water examined. The complete description of this method appears in *La Presse Medicale*, June 4, 1901, upon which these remarks are founded.

In alluding to the failures to discover the Eberth bacillus in suspected water, which have so frequently been noted in medical literature, and even quite recently, Chantemesse becomes gently satirical. He states that the failures depended on a preconceived and inexact notion in the minds of the searchers: they looked for the Eberth bacillus very much as though it were an inert foreign body, incapable of modification, similar to an unchangeable and chemically defined crystal." Chantemesse has specially studied the modifications of the Eberth bacillus, the departures from the classic type, and the defaced forms which it assumes when placed in an unfavorable medium, to which it is obliged to adapt itself in order to maintain its existence for a considerable time. He shows that shortly after its introduction into potable water, it begins to live as a saprophyte, but that after suitable treatment by an observer its ordinary characteristics may be made to reappear. It may be made to proliferate, to increase in numbers and in strength, and to renew its youth, so that it may easily be differentiated from the other microbes contained in potable water.

Chantemesse does not apply his method to the microbes contained in a few drops of a suspected water, but to a large quantity of such water, and afterwards introducing all the microbes contained therein into a second culture medium, a medium for differentiation, he claims, that the typhoid colonies reassume their particular objective characters which may be easily perceived and recognized in three or four days.

The conclusions to be drawn from this discovery are of very general interest. As this method enables the bacteriologist to discover rapidly in water the presence of the Eberth bacillus, and even to ascertain if it has been present in it for a long time, a suspected supply may be tested before it has done any harm, or

at any rate, at the beginning of an epidemic. It will thus enable health authorities to suppress the use of water taken from a well, or a public supply in which the presence of the bacillus typhosus has been demonstrated.

The origin of typhoid fever from the use of impure water is also proved to be due to the presence of the Eberth bacillus in the water consumed. The number, and especially the qualities, of these bacilli are, however, very valuable; in some instances they are numerous and virulent, in others few in number and of little strength. Chantemesse says that, in instances of the latter kind, "the secondary conditions, operative in the evolution of typhoid fever in an individual, viz.: overwork, great bodily exhaustion from insufficient food, etc., and perhaps a particular quality of the intestinal flora (estivo-autumnal), are of the greatest importance. These conditions, observable in certain individuals, realize in the Eberth bacilli which they have swallowed something analogous to the influence of a favorable culture medium, in which the proliferation and regeneration of the bacillus typhosus are effected.

Professor Chantemesse states that he has applied his method in searching for Eberth's bacilli in typhoid stools, and has often demonstrated the presence of these microbes in them. J. J. C.

A WARM WEATHER DIET.

SPEAKING broadly, one may say with perfect truth that a diet suitable for cool weather will not meet the requirements of a torrid season, such as prevailed in America during the last week of June and the first week of July. In cool weather meats and fats, being required by the organism, are eaten with genuine pleasure; in summer they are not required to the same degree, and are apt to cloy. Still, so inconsistent are we, or so much the slaves of habit, that, if compelled to abstain from the roast and broiled, through lack of appetite, we stimulate our nerves of taste to enable us to take a kind of food which we do not really require. In hot seasons, beef, lamb, and veal should be used in moderation, if at all; Chicken and fish should be substituted, together with green vegetables, fruits and bread. The use of lettuce salad at the evening meal, particularly if the sauce is well made, is most grateful to the palate. Few English-speaking Canadians, however, can toler-

ate a large quantity of olive oil in a salad dressing, possibly because a vegetable oil is not so easy of assimilation as an animal oil. Whatever the reason for the objection may be, olive oil should be introduced into a mayonnaise in homeopathic doses. The lactucarium present in lettuce is an important ingredient, giving it an action closely resembling opium, save that it is only slightly soporific. The frequent drinking of water or other fluids in hot weather is a source of annoyance, owing to the abundant perspiration, which breaks out all over the body after taking a drink. Fruit, such as an orange, relieves thirst without causing perspiration. If fatigued by exercise, some simple food such as a sandwich or biscuit taken with a glass of water is more refreshing than a plain cold drink. Iced water is rather deluding, and really seems to increase thirst, although, when taken in the form of an iced lemonade, it is rather grateful to the palate. In places where the water supply is suspected of being polluted, tea and coffee should be taken for drink. Tea, allowed to cool, with the addition of a little sugar and a slight dash of lime juice, or a slice of lemon, is a refreshing drink in hot weather.

The sensation of feeling fit and well during hot weather is the best test of a diet. During the recent hot wave (July 1st), two Japanese gentlemen stopping at a well-shaded lakeside resort near Toronto complained of the extreme heat. In their native land during summer they could get along famously on a diet of rice, fish, eggs, tea and cakes—the menu of a leading hotel, in which roast and broiled predominated was too heavy for them, and they complained of the heat. And yet they were the countrymen of the famous Japanese infantry, which showed the way to Peking, and marched faster under a burning sun than any of the allied forces of Europe and America. Possibly genteel loafing in a strange land, want of exercise, and the lack of sympathetic conversation with young men of their own age, may have intensified the feeling of discomfort arising from hot weather.

The following menu enabled the writer to complete a very hot day with comparative satisfaction. Breakfast, at 8 a.m., consisted of Indian meal porridge and milk, tea and toast, and peaches. After four hours' work at the desk, a fulness in the head induced the use of a dessertspoonful of effervescing sulphate of magnesia, before taking luncheon. Luncheon consisted of an omelette, with beans and potatoes, milk pudding, and a cup of tea. At 2

p.m. took a trolley ride to Long Branch—about nine miles out. Felt quite light-spirited and inclined to chat to my companion. Observed that the occupants of the car, although there was a fine breeze blowing, seemed uncomfortable. Even the women did not speak much, but yawned and spoke in monosyllables. On arriving at my cottage, I removed my coat and hat, took a rake, and spent two hours raking into a heap the dead leaves of A.D. 1900. Perspired freely, but drank nothing; did not smoke at all; 6 p.m., took a sandwich and a glass of ginger ale. Arrived home at 7.20 p.m. after a glorious trolley ride. Had a small porter-house steak, some potatoes, some lettuce salad, bread and butter, and a cup of tea. Felt perfectly well. My sense of physical satisfaction seemed to depend on these factors: A small dose of sulphate of magnesia before lunch, active exercise under the shade of trees in the pure air of the country, two pleasant rides along the lake shore, avoidance of tobacco, and supper in the cool of the evening when the stomach was empty and the body was prepared by exercise for a meal.

Readers of Lord Byron's biography will recollect that the poet exhibited a preference for sulphate of magnesia, which stimulated him much as others are stimulated by champagne. Byron was probably arthritic, hence his instinctive craving for sulphate of magnesia. All men, however, are not arthritic (*Laus Deo*), and the strumous, the tubercular and the normal, when doing their best work, require different kinds of diet; but, during the heated term, men of any diathesis will be benefited by practising moderation in eating, drinking and smoking.

J. J. C.

THE WINNIPEG MEETING OF THE CANADIAN MEDICAL ASSOCIATION.

To celebrate another turning of the milestone of *The Medical Association of Canada*, we are soon to meet in conclave grave, and our meeting place is to be the Queen City of the great North-West—Winnipeg.

Winnipeg, the mushroom city that seems to have sprung up in a night, but yesterday we were wishing *bon voyage* to our college mates and friends who were going out to swell the boom-tide in Manitoba, "to grow with the place," and to build a big town over

the site of Fort Garry, and call it Winnipeg. Now, hospitably opening its gates, the physicians invite their brethren from far and near to come in and hold their meeting there, to admire the fine hospitals, asylum, educational buildings, stockyards and abbatoir, residences and mercantile buildings, and note the large monetary institutions and allied interests that are now known in commercial spheres throughout the length and breadth of Canada.

It is well worth all physicians' while who contemplate "a first visit" to Winnipeg, to see a specially illustrated copy of the *Trade*



DR. L. BROCK

President-Elect of the Ontario Medical Council.

Review (Nov. 17th, 1899), published in Montreal (at Toronto a copy may be seen at the Manitoba Government Offices), and thereby obtain a glimpse of the character of the buildings that adorn the streets of the banner city of the West.

The railways have granted a single return fare to the meeting, the Secretary, Dr. F. N. G. Starr, tells us, and also a single fare rate from Winnipeg to points in Manitoba, British Columbia, and North Dakota. As a rule, the United States physician looks forward, plans forward, and arrives "sure and early" at his annual

meeting; to him it is a pleasure, a holiday, and a profitable season all in one; he gets what he goes for. After being many times present at the American Medical Association meeting, we have noticed that he contributes a great deal of the ultimate benefit he receives by his enthusiasm and *bon camaraderie*. This precedent our Canadian doctors would do well to follow, as often the attendance is not as large as it should be; for we think, without boastfulness, we may say our programme from year to year, from a scientific standpoint, is something to conjure with. In our July number we gave a list of papers to be read at the coming meeting; since then the following have been added to the list:

Tuberculosis in Milk.—Prof. Russell, University of Wisconsin.

The Present Outbreak of Small-pox in America.—H. M. Bracken, Health Officer, Minnesota.

Disposal of Tuberculous Sputum.—J. H. Elliott, Gravenhurst.

Title to be Announced.—G. Chambers, Toronto.

Chronic Ulceration of the Stomach Simulating Cancerous Disease; Relation of a Case of Gastro enterostomy with Murphy Button, Recovery.—J. F. W. Ress, Toronto.

Report of Cases Treated with the Hot Air Bath.—W. H. Pepler, Toronto.

Title to be Announced.—J. N. Hutchison, Winnipeg.

Some Forms of Gastric Hyperacidity and their Treatment.—C. F. Martin, Montreal.

Syphilis, as Seen by the Ophthalmic Surgeon.—F. Buller, Montreal.

On the Necessity of a Better Recognition and Isolation of Trachomatous Patients in Canada.—W. Gordon M. Byers, Montreal.

Title to be Announced.—J. L. Bray, Chatham, Ont.

Epidemic Cerebro-Spinal Meningitis—A History of Some Cases.—James McKenty, Gretna, Man.

Pulmonary Tuberculosis, its Treatment and Prevention.—A. P. Proctor, Kamloops, B.C.

Mild Small-pox.—G. A. Kennedy, Macleod, Alta.

Title to be Announced.—C. J. Fagan, Victoria, B.C.

The question of Dominion Registration will come up for a full discussion.

A twofold result of the meeting at Winnipeg is looked forward to—a change of scene, an interchange of ideas—and, may we add, the expending of our loose change by prolonging our holiday, going further afield than the convention city—out to the great “Rockies,” and there seeing Mother Nature as she rises in her supreme dignity; “range after range of peaks gleaming with green and gold and garnet, over which the clouds drop purple shadows, or passing on to the west, catch and cling to some great crag, and there dissolve in rain.”

Let us all build our castles in Spain, and add all the turrets we can to them—the expanse is surely broad enough. A friend from California drifted in the other evening, and speaking of the meeting at Winnipeg, he laughingly said, “Oh, yes, that is the place they have two weeks without sleighing every summer.”

But Old Probs has given us the wink, and the wind still whispers, “Westward ho!”

W. A. Y.

EDITORIAL NOTES.

Care of the Organ of Hearing.—Grown-up people, says Dr. Lermoyez, of Paris, in *La Presse Medicale*, ought to be resigned to notice the ear gradually fail, like the other senses. However, this failure of the organ of hearing should be neither precocious nor precipitate. It is, also, prudent to have one's hearing verified by an expert, inasmuch as an individual makes serious mistakes in judging his own sharpness of hearing, by holding a watch at arm's length. In certain professions, testing the hearing is absolutely necessary. Railway trainmen ought to have their hearing examined at least once a year. On account of their business, which exposes them to gusts of wind, as well as piercing whistles, they are liable to become deaf. It is not at all rare for them to be affected without their knowledge, with a kind of auricular Daltonism (Moss), which deprives them of the faculty of hearing sharp noises, that is to say, the very signals which they ought to hear best of all. Singers should also have their hearing periodically examined. Some fine day a singer shows that he has lost the correct appreciation of tone, or sings in a full tone when he should sing in semi-tones, for no other reason except that his failing organ of hearing improperly regulates the sound he wishes to produce.

Is a Buzzard a Bacterium.—In reference to some remarks about osteopathy which appeared in our June number, Dr. Ashmead, of New York, sends us a pleasant letter, published in our July number, indicating that in describing the buzzard as “not remarkable for sense,” our view differs from his observations made in Japan. In that country, he says that the buzzards regularly remove and consume domestic garbage. In the note in our June number it was stated that a bacterium is a micro-organism, and not a buzzard, as the writer on osteopathy we quoted says it is. It is not necessary to ask Dr. Ashmead to acknowledge the truth of our assertion. He will, no doubt, also agree with us that osteopaths claiming to practise a science, should not be exempted from examination as to their knowledge of its principles. “They should also possess a knowledge of drugs, if for no other purpose than to be able to recognize the symptoms of poisoning; for it stands to reason, that patients would send for them to treat them, unconscious of the fact that they knew nothing of the drug symptoms” (*Medical Visitor*). Dr. Ashmead will, probably, also admit that, if the buzzards who, without being “remarkable for sense,” yet undertake to advise the public in medical matters, were to abandon America for Japan, educated physicians would not shed many tears.

Late Notice of Bioxide of Sodium by Pharmaceutical Journals.

—In glancing through some pharmaceutical journals, we noticed in *The Spatula*, of New York, May, 1901, an article on bioxide of sodium, entitled “A New Air Purifier.” This article is also published in *The Montreal Pharmaceutical Journal* for June, 1901. We have no objection to find with the article in question, except that the writer is rather behind the times in stating that “Drs. Desgrez and Balthazard have recently made the important discovery that bioxide of sodium will purify and repurify air indefinitely.” In August, 1899, an article appeared in this journal describing the chemistry of the discovery made by the French physicians, and concluding as follows: “This discovery may be utilized in submarine work, principally in the submersible ships which are so much spoken of now-a-days. In order to maintain the balance of the confined air and the normal air pressure, it would be absolutely necessary to provide a second service of oxygen—say, for instance, a few tubes of liquid oxygen—for the bioxide of sodium absorbs proportionately more carbon dioxide

than it exhales oxygen, and in one case the experimenters observed that the pressure fell a fifth of one atmosphere as a result of this difference in oxygen."

Dr. Kitchen, of St. George, Entertains the Ontario Board of Health.—The members of the Provincial Board of Health of Ontario were entertained by Dr. and Mrs. Kitchen, of St. George, Ont., on the 24th and 25th of June last in a style which it would be difficult to surpass. Met at the station by their host, they had an opportunity of admiring, behind a team of "blood horses," a handsome countryside and a neat village, which looked their best on a warm June afternoon. The dinner, which was served at Dr. Kitchen's mansion, was a very pleasing function, and was most gracefully presided over by the hostess. Drs. Patten, Barber, and McWillie, of St. George, dined with the members of the Board. After a post-prandial chat on the lawn, a meeting of the Provincial Board of Health was held in Dr. Kitchen's library. A pleasant night's rest, devoid of the noises of the city, breakfast, and a glorious drive to Harrisburg, terminated a visit not soon to be forgotten.

Diet for Tubercular Patients.—A well-regulated and nutritious diet is indispensable in European sanatoria for tubercular patients. The following diet for an afebrile tubercular patient is worthy of note:

- 8 a.m.—Bread, butter, honey, cocoa, coffee or chocolate, with two or three glasses of milk.
- 10 a.m.—Bread, butter, cold meats, etc.
- 1 p.m.—Soup, fish, meat, salad, vegetables, preserves, dessert and fresh fruit, with one or two glasses of wine.
- 4 p.m.—Glass of milk, with bread and butter.
- 7 p.m.—Thick soup, meat, rice, bread and butter, salad, cooked fruit, and again one or two glasses of wine.
- 9 p.m.—Glass of milk, with two or three teaspoonfuls of cognac.

People of normal body temperature who would partake of such a menu, would not be likely to find their way to a sanatorium of any kind, unless they happened to develop gout.

Thermometric Indications of Predisposition to Disease.—Dr. Tatau (of Nantes) in a paper read before the Therapeutic Society of Paris, contended that the temperature of the body bears direct relation to certain tendencies to disease in individuals. He

divides people in ordinary health into three distinct categories, measured by the temperature of their bodies. In one of these groups (the normal) the temperature of the body ranges from 98 3-5 to 99.5 Fahr. In a second group the regular temperature is 100 2-5; people with the latter body temperature have a tendency to tuberculosis, and as a matter of fact they do contract tuberculosis in the sequel. Certain other individuals, the gouty and the scrofulous, have a temperature below 98 3-5 Fahr.

To Get Rid of the Mosquitoes in Inhabited Places.—Opinions differ as to the best means of getting rid of the mosquitoes in inhabited places. Dr. Onimus recommends the vaporization of oil of cajeput in the room which is to be cleared of the pests, but he thinks that a strong current of air, such as may be generated by an electric fan, is more effective. Dr. Michon favors the causing of a thick smoke, before sunset, in the room which is to be freed of mosquitoes, taking care to leave the windows open. The insects are driven out and, after the smoke has escaped from the room, the windows are closed. Dr. Laveran pins his faith to a good mosquito net.

Meeting of the Executive Health Officers of Ontario.—The Sixteenth Annual Meeting of this Association was held at Brantford, on the 25th and 26th of June. The Mayor of Brantford, Mr. Wood, the Chairman of the Local Board of Health, Mr. Bowlby, and the members of the civic committee assisted in making the meeting a success. Many of the papers read were of a high class, and the subsequent discussions useful and instructive. The Association has reason to feel satisfied with the progress it has made. With increased instruction in hygiene in the schools, the rising generation of Canadians will evince a keen interest in sanitation.

Dr. Senn's Race Against the Sun.—Dr. Nicholas Senn will devote his summer vacation to a ninety-days' trip around the world. He will travel in an easterly direction, and the journey has been christened by him as "a race against the sun." The same phrase will form the title of a book, in which form letters to the *Chicago Tribune* will appear later. He will be accompanied by Dr. Daniel R. Brower, his colleague at Rush Medical College, and two other professional acquaintances.—*Med. News.*

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The Physician's Library.

BOOK REVIEWS.

Progressive Medicine. A quarterly digest of advances, discoveries, and improvements in the medical and surgical sciences. Edited by HOBART AMORY HARE, M.D., assisted by H. R. M. LANDIS, M.D., assistant physician to the out-patient medical department of the Jefferson Medical College Hospital. Vol. II.; June, 1901. Surgery of the abdomen, including hernia; Gynecology; Diseases of the Blood; Diseases of the Glandular and Lymphatic Systems; Metabolic Diseases; Ophthalmology. Philadelphia and New York: Lea Brothers & Co. 1901.

Among the contributors to Vol. II. of *Progressive Medicine* for 1901, we find the name of our confrere, Dr. Alexander B. Blackader, of Montreal. Some of the other writers in the volume are Drs. W. B. Coley, J. Chalmers Da Costa, Wm. Ewart, H. B. Baker, Alf. Stengel, and A. L. Turner.

We have seldom had the pleasure of reading a more thorough and exhaustive treatise on the Radical Cure of Inguinal Hernia than that by Dr. Wm. B. Coley in this volume, covering over fifty pages. It is entirely up to date, is written in a most lucid manner, rendering its perusal enjoyable and instructive reading, instead of being, as too many a treatise upon this subject is, a dry and decidedly knotty study. The section is beautifully illustrated in half-tone. Two other chapters which attracted our attention as being thoroughly practical were by Dr. J. G. Clark, the one on "The Disinfection of the Hands," and "The Diagnostic Value of Pain in Gynecology." Vol. II. of *Progressive Medicine* is fully up to the standard of previous editions.

W. A. Y.

Text-Book of Physiology. Edited by E. A. SCHAFER, LL.D., F.R.S., Todrell Professor of Physiology, University College, London. Two volumes. Edinburgh and London: Young J. Pentland. New York: The Macmillan Co., 1898. Toronto: Tyrell & Co.

There is little doubt that there has, for years now, been felt the want of a good text-book, in the English language, on the very important subject of physiology. There are some good manuals on the subject to be got; but as animal physiology forms the basis of

everything else, and a correct, in fact, a minute, knowledge of it is absolutely essential before one can properly study pathology, or anything still further advanced, the necessity of a text-book or system of physiology will at once be recognized. Dr. Schafer's reputation in matters physiological is well known, and the mere fact of his name appearing as editor to this work, will alone be more than sufficient to sell it. The book is in two large volumes; each is filled from cover to cover with matter well and succinctly written, the topography being exceedingly distinct and attractive to the reader. Volume I. deals with the chemical constitution and chemical processes of the animal body, and those phenomena connected with the production and elaboration of the secretions and fluids of the body. In the second volume, circulation and respiration, the physiology of muscle and nerve, the special senses, and the functions of the central nervous system, are dealt with in detail. We perused with great interest the section devoted to circulation and respiration, those subjects being treated in a clear, comprehensible manner, and makes a couple of hundred pages worthy of study by even the most advanced student. The text-book is the right size, not too bulky; but contains information which all students and practitioners of medicine should make the basis of their life-work. We bespeak for Dr. Schafer's Text-Book an unusually large sale.

A Syllabus of New Remedies and Therapeutic Measures; with Chemistry, Physical Appearance and Therapeutic Application. By J. W. WAINWRIGHT, M.D., Member of the American Medical Association, New York State Medical Association, United States Pharmacopeial Convention, 1900; American Chemical Society, etc. Pages, 229. Price, \$1.00 net. G. P. Englehard & Co., 358-362 Dearborn St., Chicago, 1901.

This monograph reveals to the reader all that is strictly new in the science of medicine and therapeutics. In it he will find most of the very latest remedies that have passed the experimental stage and have become absolutely essential to the physician who intends keeping up with the age. Special mention might be made of the articles on anesthesia, local and regional, including spinal cocaineization, the animal remedial preparations, and serum therapy. The application of heat and cold, with a description of the hot air treatment which is meeting with remarkable results in acute and chronic rheumatism, traumatic synovitis, sprains, arthritis deformans and other joint affections; the treatment of Nauheim and Schott in all sorts of cardiac insufficiencies; and finally, a description of the many uses of the Roentgen Ray—these all help to make a very complete volume, and should save the busy doctor or student much unnecessary time spent in searching the

many journals and works for clinical reports on these subjects. The publishers' work is of the most finished and approved style.

W. H. P.

Sajous' Annual and Analytical Cyclopedia of Practical Medicine.
Volume VI. Rectum and Anus, Diseases of; to Zinc. General Index. Philadelphia: The F. A. Davis Co.

We are indebted to the publishers for the last volume of this admirable series. As the editor says, "the complete work presents all the general diseases usually described in text-books, and besides, what progressive features the past decade has furnished." Truly a great claim, necessitating the exclusion of much that seemed admirable at one time, but which the relentless hand of progress has relegated to disuse; and also bringing into notice new surgical procedures, and novel therapeutical agents which have replaced operations of less precision, and remedies of less efficacy, than those with which some of us were familiar.

The general index at the end of the sixth volume enables the reader to readily find any article in the cyclopedia he wants. Of necessity such a medical cyclopedia is of the first importance, placing the ordinary physician, who is willing to read carefully, in the position occupied by a man who reads and digests the standard medical literature of the day. Changes, of course, will occur, and new writers will have to take up the pens of those who have fallen by the way; but, in many subjects, for a decade or more, little change will occur, and to keep track of subjects about which opinion is shifting, it will be necessary to read reputable medical journals.

J. J. C.

Uterine Fibromyomata: Their Pathology, Diagnosis and Treatment. By E. STANMORE BISHOP, F.R.C.S.Eng., President Manchester Clinical Society; Fellow of British Gynecological Society; Honorary Surgeon Ancoats Hospital, Manchester, etc. With 49 illustrations. Philadelphia: P. Blakiston's Son & Co., 1012 Walnut Street. 1901. Canadian Agents, Chandler & Massey Limited, Toronto, Ont. Price, \$3.50.

The subject of uterine fibromata, or as the author prefers, fibromyomata, is one of great interest to medical practitioners. Those who are not doing abdominal surgery require a knowledge of the diagnosis, prognosis, and condition of patients after the various methods of operation, while those engaged in abdominal work require, in addition, a knowledge of the technique and methods of other surgeons. This work of 323 pages, including index, is designed to fill the wants of both classes.

After a review of the anatomy of the parts, symptomatology, diagnosis, development, and secondary changes in the tumors are taken up. Treatment is considered under the heads of medical, electrical, and surgical. The methods and technique, together

with the post-operative results of a great number of operators, are given in as clear and concise a form as possible. This latter is a very valuable feature of the work.

The illustrations are clear and the paper and type good. Altogether, we can recommend this work to our friends. W. J. W.

Atlas and Epitome of Ophthalmoscopy and Ophthalmoscopic Diagnosis. By PROF. DR. O. HAAB, Director of the Eye Clinic in Zurich. From the third revised and enlarged German edition. Edited by GEO. E. DE SCHWEINITZ, Professor of Ophthalmology Jefferson Medical College, Philadelphia. With 152 colored lithographic illustrations and 85 pages of text. Philadelphia and London: W. B. Saunders & Co., 1901. Toronto: J. A. Carveth & Co. Price, \$3.00 net.

An atlas can never supply the place of actual clinical instruction—plates of ophthalmoscopic appearances, however well executed, give but an idea of the real, yet to the beginner, or to the practitioner who has not access to an abundance of clinical material, they may prove useful. In obscure or rare cases an atlas may serve as a standard of comparison.

In this work the lithographs of the fundus changes are very well done. In addition there are many plates of the microscopic lesions, as well as some 80 pages on the use of the ophthalmoscope. If the value of a medical book may be judged by the number of its editions, then is Haab's Atlas indeed valuable, for it has run through four English editions in five years. J. M. M.

A System of Physiologic Therapeutics. A Practical Exposition of the Methods, other than Drug-Giving, Useful in the Treatment of the Sick. Edited by SOLOMON SOLIS COHEN, A.M., M.D., Professor of Medicine and Therapeutics in the Philadelphia Polyclinic; Lecturer on Clinical Medicine at Jefferson Medical College, etc. Volume II., *Electrotherapy*, by GEORGE W. JACOBY, M.D., Consulting Neurologist to the German Hospital, New York City; to the Infirmary for Women and Children, etc. In two books: Book II., Diagnosis; Therapeutics. Illustrated. Published by P. Blakiston's Son & Co., 1012 Walnut Street, Philadelphia, Pa. Price, eleven volumes, \$22.00 net. Canadian Agents: Chandler & Massey, Limited, Toronto and Montreal.

In this volume, our friends the specialists will find much material of value to them, as in it are several chapters upon the uses of electricity in surgery and the specialties. We are glad of one thing, viz., that each chapter is complete in itself, so that it is not necessary for the reader, in studying any particular subject, to have to wander from one part of the volume to the other in order to complete his work. This is a most commendable feature of Dr.

Cohen's system. This book is divided into Parts III., IV., and V.: Electrophysiology and Electropathology; Electrodiagnosis, and Electroprognosis; and Electrotherapeutics. To the general practitioner the last section will prove most interesting, taking up, as it does, the more practical side of the subject. The pages devoted to the electric treatment in diseases of the motor nerves and muscles, diseases of the muscles and joints, diseases of the sensory nerves, and diseases of the central nervous system, are very interesting indeed, and well worthy of careful study. To any one desiring an accurate knowledge of electrotherapeutics, we say, buy these two books.

The Crisis. By WINSTON CHURCHILL. Toronto: Copp Clark & Co., Limited. Cloth.

The world and his wife has read "Richard Carvel," and thoroughly enjoyed it. Even the author seems to have so loved his characters that he was loath to let the book close over, and so he still perpetuates their memory by devoting the pages of "The Crisis" to the lives and times of their descendants. Many characters live to speak in this tale of troublous times in the grand old South, but the author, with wondrous skill, gives to each an interest, and the reader finds himself never perplexed by this wealth of personalities; but on the contrary, the story would seem incomplete were even one omitted.

Mr. Churchill has been accused of hero-worship, a good fault when a hero so worthy of the worship is honored in the person of Abraham Lincoln. May we quote a word or two of the author's graceful tribute: "The 'Lincoln of the black loam,' who built his neighbor's cabin and hoed his neighbor's corn, who had been store-keeper, and postman, and flat-boat man . . . the physician who was one day to tend the sick-bed of the nation in her agony; whose large hand was to be on her feeble pulse, and whose knowledge, almost divine, was to perform the miracle of her healing." Do not omit "The Crisis" from the summer's holiday list of books to be read; it is certainly more than "worth while." A little of joy, something of sorrow, and a very great privilege and an absorbing interest to the reader.

W. A. Y.

Golden Rules of Aural and Nasal Practice. By P. R. W. DE SANTI, F.R.C.S., Aural Surgeon to Westminster Hospital. "Golden Rules" series No. IX. Bristol: John Wright & Co. 1s.

This little book of waistcoat-pocket size, in its 84 pages, seeks to emphasize the essential points with a view to practical utility. The author has certainly done wonders in the limited space given him, and both student and busy practitioner will find the "Golden Rules" valuable as a refresher of memory.

J. M. M.

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NO. 3.

Original Contributions.

ADDRESS IN SURGERY.*

BY A. PRIMROSE, M.B., C.M. (EDIN.), M.R.C.S. (ENG.), TORONTO,
Professor of Anatomy and Associate Professor of Clinical Surgery in the University of Toronto.

WHEN asked by your President to deliver the Address in Surgery before the Maritime Medical Association, I accepted the honor in ignorance of what it involved. It would have given me infinitely more pleasure had I been permitted to attend your society meeting in a much humbler capacity; but, as a Nova Scotian by birth, I feel that I am addressing friendly critics, who will pardon my shortcomings, and perhaps account for them by considering that they are due to the unfortunate circumstance that I left my native province and have settled in the West.

The beginning of the new century has brought out many able articles describing the progress of surgery for the past hundred years. The death of our beloved Queen a few months ago has stimulated many British writers to give a retrospect of the progress of our profession during the Victorian era. The historical record has thus been fully written, and it would appear justifiable now to make reference to some of the more recent developments in surgery, particularly in connection with certain principles which have been enunciated during the latter part of the nineteenth century, and which are at the very foundations of modern scientific surgery, principles forming the foundation which has been

*Read before the Maritime Medical Association Meeting, held at Halifax, N.S.,
July 3rd and 4th, 1901.

laid broad and deep, and has stood the stress and strain of the development of a remarkable superstructure in the surgery of to-day.

ANÆSTHESIA.

The practice of surgery before Simpson's time was a cruel task for both operator and patient, and those of us who were not in practice during the pre-anæsthetic days can hardly realize what an untold blessing the introduction of anæsthetics has been in relieving human suffering and in permitting us to extend the field of operative surgery.

There was most unreasonable opposition to the use of anæsthesia shortly after its introduction. In addition to objections on moral and religious grounds, it was supposed that various dire calamities followed the administration of chloroform; for example, many urged that apoplexy frequently ensued and proved fatal. Simpson, in referring to apoplexy, speaks of an incident in the life of Lord Loughborough, as related by John Lord Campbell. The biographer states that when he first travelled from Edinburgh to London in a mail coach the time had been reduced from the former twelve or fourteen days to three nights and two days. "But," he adds, "the new and swift travelling from the Scottish to the English capital was wonderful, and I was gravely advised to stop a day at York, as several persons who had gone through without stopping had died from apoplexy from the rapidity of the motion." "Be assured," says Simpson, "that many of the cases of apoplexy alleged to arise from ether or chloroform, have as veritable an etiology as this apoplexy from the rapidity of motion."* All such absurd objections to the use of anæsthesia have of course been removed, but the choice of anæsthetic is to-day a question the importance of which can hardly be exaggerated. In this age of specialism one is inclined to relegate the settlement of it to those who make it a special study. It is true that experimental physiologists have so far been of little assistance to us in their attempts to settle this difficult problem. The Hyderabad Commissions have failed to convince the profession as a whole of the infallibility of their conclusions, and we find even that their results are directly challenged by eminent British experimenters, chiefly those of the Cambridge school. In the meantime we are content to watch the "battle royal" from a respectful distance, and to entertain the hope that some definite and incontrovertible evidence may soon be forthcoming from the physiological laboratory regarding the action of chloroform on heart, respiration, etc. We turn, however, more hopefully to the anæsthetists who are daily administering anæsthetics to their fellows. It is true that

* "Sir James Young Simpson and Chloroform," by H. Laing Gordon, p. 113. 1897.

here, too, we find difference of opinion. Visiting Edinburgh recently, I found as of old that chloroform was the favorite general anæsthetic, whilst in London one observed that ether is still considered the preferable drug. I am bound to admit that as an Edinburgh man visiting London, I always felt convinced that the London men did not know how to give chloroform; and, to be absolutely fair, one might add that in Edinburgh ether is not administered as elegantly and with as much comfort to the patient as in London. I have learned as an operating surgeon to be content to leave the choice of anæsthetic at my operations to the anæsthetist, provided I have thorough confidence in the administrator. With perfect satisfaction I find that ether preceded by nitrous oxide gas is thoroughly satisfactory, after the manner suggested by F. W. Hewitt of the London Hospital. In the hands of a competent administrator I find that the patient almost invariably becomes completely anæsthetized without a struggle in from 1 1-2 to 4 minutes, and one may at once proceed with the operation. Whilst this is my experience in Toronto with ether in the hands of a skilled administrator, I find that another colleague of mine, also a skilled anæsthetist, but from the Edinburgh school, sticks with the pertinacity of his Scotch preceptors to chloroform, and, I freely admit, with results leaving nothing to be desired. Thus I have come to the conclusion that for the operating surgeon it is rather the choice of an anæsthetist than the choice of an anæsthetic that concerns him.

Fortunately, fatalities from the administration of anæsthetics are extremely rare. Recently Gurlt produced statistics before the "Deutschen Gesellschaft für Chirurgie" concerning the mortality under anæsthetics as follows:*

Chloroform	1 death in 2,075 administrations.
A. C. E. (Billroth's mixture) .	1 " " 3,370 "
Ether	1 " " 5,112 "
Chloroform and Ether	1 " " 7,613 "

Statistics are, however, of little value. It seems clear that not infrequently when death occurs the fatal issue is postponed for some hours, so that, particularly in respect to ether, fatal consequences which may be directly traced to the anæsthetic do not occur for twenty-four hours, or perhaps several days from the date of administration. I suppose we all feel that at least some of the fatalities under anæsthesia might have been prevented. However this may be, it is obvious that one of the most important branches of instruction in our medical schools should always be instruction in the proper method of administering anæsthetics.

*Vide "Hundert Jahre Chirurgie" H. Tillmanns, p. 8. Leipzig, 1898.

Local anaesthesia has, of recent years, proved a discovery of great importance. The discomfort and danger of the general anaesthetic may often be dispensed with in minor surgical operations under cocaine. In 1894 Dr. Schleich, of Tübingen, demonstrated a new method of what he called "Infiltrationsanästhesie." A very weak solution of cocaine (1 per 1,000) is used, the solvent being a physiological salt solution of about half the usual concentration. A small spot of skin near the field of operation is rendered insensible by ethyl chloride, and here a few drops of cocaine solution are injected. At the spot of infiltration a bulla immediately rises, which is absolutely without sensation. Pushing the point of the syringe through the area of insensibility Schleich again injects a few drops. Another bulla rises close to the first, and, proceeding from bulla to bulla around the field of operation, the whole is infiltrated and rendered quite anesthetic. Schleich suggested three different solutions for this purpose of varying strength. In normal healthy skin the cocaine injection is very much weaker than is necessary in inflamed or hypersensitive areas.

The writer has observed that a 2 per cent. solution of cocaine is all that is necessary in most cases in which local anaesthesia is indicated. One is bound to state from one's own experience that the infiltration method is sometimes fraught with danger, being sometimes followed by extensive sloughing of the tissues throughout the area of infiltration. If the operation is too extensive for the use of a 2 per cent. solution of cocaine in the usual way, one would prefer a general anaesthetic to Schleich's infiltration method.

Some reference may be made to the introduction of cocaine into the spinal meninges in the lumbar region. This was suggested by Bier of Kiel. It would appear that some years previously Covering, of New York, in 1885, injected a solution of cocaine as near to the spinal cord as possible, and produced insensibility of all the body below the point of injection. The idea of injecting the solution into the lumbar region of the spinal meninges was suggested to Bier when Quincke of Kiel devised the well-known means of puncturing the spinal canal in the lumbar region for the purpose of drawing off cerebro-spinal fluid. One cannot speak from experience of this method, but one is interested in observing cases which have been reported in literature. It has been recently stated that the method has been used on the continent about 2,000 times, and of these six fatal cases have been placed on record. If this be true, the mortality under this method of producing anaesthesia is about six times as great as that of chloroform, and many more times greater than that of any other anaesthetic. It would therefore appear from this standpoint alone that one should hesitate to employ the method, though one can conceive that certain circumstances might arise in which its employment might be desirable.

ANTISEPTIC AND ASEPTIC SURGERY.

A review of the more recent progress of surgery demands some inquiry into the present status of our knowledge regarding the guiding principles which underlie the surgical treatment of wounds known as the antiseptic or aseptic method—a method which we owe to the scientific insight and genius of Lord Lister. The writer is old enough to remember something of the fierce antagonism which many leaders of our profession showed to Lister's methods. Even as late as 1887 one finds a prominent English surgeon writing as follows: "The germ hypothesis has in this country adherents whose opinions are entitled to respect, but it appears to me to be not proven and more likely to be abandoned than to be confirmed." To-day we find that the field is completely abandoned by such sceptics, and Lister has lived long enough to have received something of the gratitude he so well deserves for the inestimable service he has rendered to humanity. It is true he received encouragement very shortly after he had introduced the system from the remarkable results which were at once obtained. In his address before the British Association in 1896, after referring to his early results in the Glasgow Royal Infirmary, he relates the following incident: "Equally striking changes were afterwards witnessed in other institutions. Of these I may give one example. In the great Allgemeines Krankenhaus of Munich, hospital gangrene became more and more rife from year to year, till at length the dreadful condition was reached that 80 per cent. of all the wounds became infected by it. . . . The institution seemed to have become hopelessly infected, and the city authorities were contemplating its demolition and reconstruction. Under these circumstances Professor VonNussbaum despatched his chief assistant to Edinburgh, where I at that time occupied the chair of Clinical Surgery, to learn the details of the antiseptic system as we then practised it. He remained until he had entirely mastered them, and on his return all the cases were on a certain day dressed on our plan. From that day forward not a single case of hospital gangrene occurred in the Krankenhaus. The fearful disease pyemia likewise disappeared, and erysipelas soon followed its example."

For the last few years Lister has learned something of the gratitude of his fellows by the honors which have been conferred upon him. In Britain he has been created a Peer of the Realm, and in turn President of the British Association for the Advancement of Science, and President of the Royal Society. In foreign countries, too, scientists have vied with one another in their efforts to do him honor. One would think, however, that perhaps the greatest satisfaction which he must now enjoy is in being able to write, as he did in the Huxley Lecture, that "the principle that

first guided me still retains its full value; and the endeavor to apply that principle so as to ensure the greatest safety with the least attendant disadvantage has been my chief life work."

It is not my intention to say anything in detail regarding the work of Lister. We have all, I am sure, been greatly interested in the delightful sketches he has himself given of his life's work, mainly in two articles, the first as President of the British Association at Liverpool in 1896, and last year in the Huxley Lecture at the Charing Cross Hospital. In the latter paper he speaks of his early work in the physiological laboratory, where he made important observations on the physiology of the blood, the process of clotting, the phenomena of inflammation, the function of cilia, the diffusion of pigment in the cells of the frog's skin, etc.

Lister was essentially practical. He seemed to have the peculiar faculty of getting a fragment of scientific truth and then building upon it, so as eventually to evolve deductions of great practical value. For example, Kölliker discovered the fibre cells of involuntary muscles, which he demonstrated as existing along with elastic tissue in the middle coat of the larger arteries. Lister followed up this piece of work by demonstrating muscle in the finest arteries, and thus he settled a difficulty in accounting for the hitherto unknown mechanism of constriction of these vessels. Bernard detailed his classical experiment regarding the turgid condition of the rabbit's ear from increased blood supply after section of the cervical sympathetic; Waller showed that extreme pallor was the result of stimulation of its peripheral end; Lister connected the central nervous system with these processes, and suggested by his experiments on the spinal cord the true mechanism of vasomotor action. Whilst experimenting in order to test the accuracy of Richardson's view that coagulation of the blood was due to the escape of ammonia, Lister not only proved the falsity of Richardson's view, but in doing so he demonstrated the very important influence which injury of the vessel wall has in determining the formation of a clot. But the crowning proof of Lister's remarkable power of assimilating scientific truth and developing it, appeared when Pasteur demonstrated that putrefaction was caused by microbes growing in putrescible material, and the falsity of the suggested possibility of spontaneous generation of microbes. It was the application of this truth to scientific surgery which has made Lister the hero in medicine which we acknowledge him to be to-day.

The time has gone by when the enthusiastic disciple of Lister in an address of this kind finds it necessary to define the principles of antiseptic surgery and then summon evidence from his own practice in support of that doctrine. We have all had experiences nowadays which prove the truth of these principles, and we are all of one mind on the subject.

The progressive character of Lister is remarkable—in fact he moved far too fast for many of his followers. Witness his remarks at the Berlin Congress in 1890 (eleven years ago)—remarks which almost staggered those who had learned to place absolute confidence in every detail of his antiseptic methods. At that time in Berlin he produced what he stated to be “absolute demonstration of the powerlessness of atmospheric dust in surgical operations.” “This conclusion,” he says in a recent address, “has been justified by subsequent experience. The irritation of the wound by antiseptic irrigation and washing may therefore now be avoided and nature left quite undisturbed to carry out her best methods of repair, while the surgeon may conduct the operation as simply as in former days, . . . the use of simple means which will suffice to exclude from the wound the coarser forms of septic impurity.” This, one observes, is the true basis of modern aseptic surgery.

In attempting to give an address upon the status of modern scientific surgery one has almost involuntarily turned to Lord Lister's work as constituting the basis of it all. Let me, before concluding my remarks on Lister's work, call attention to the fact that, although, as he remarked himself recently with great regret, advancing years have made it necessary for him to retire from the active work of his profession as a surgeon, yet one finds that he is still active in his efforts to promote scientific truth of practical value for the profession. Witness his exhaustive paper “On Recent Researches with Regard to the Parasitology of Malaria,” delivered to the Royal Society on the 30th November last. He shows the gradual evolution of the mosquito-malarial theory, and indicates its true value. Incidentally he gives credit where it is due to the pioneers in this field of research, and, in the words of a writer in the *British Medical Journal*, checks “the somewhat undignified form of scientific piracy of certain ‘continental workers’ who have attempted to belittle the work done by others and to claim credit for themselves.”

There is such a thing as riding a hobby too hard, and it is ludicrous to observe how extreme some individuals have become in their efforts to outdo Lister. The late Mr. John Duncan, of Edinburgh, in his address on opening the surgical section of the British Medical Association in 1898, referred to the ridiculous extremes to which some so-called antiseptic surgeons go. The expenditure of money on tiles and glass to such a lavish extent in some hospital theatres is remarkable. He suggests that if some of these extremists would be logical in carrying out all necessary requirements they must cut off the spectators at an operation by an impermeable but transparent screen—the emanations, too, of the operator and assistants being much more likely to reach the wound than those of the spectators, Mr. Duncan pictured to him-

self "a time when every one concerned in an operation—patients, surgeons, and assistants—having been rendered from top to toe cutaneously aseptic, shall cover each natural orifice of the body with an antiseptic mask, and clothing themselves in a raiment scientifically pure, shall pass into an atmosphere freed from germs by the air-pump and by heat."

There really appears to be a danger that the elaborate measures which are sometimes taught regarding necessary procedure in operative surgery are destined to mask and render obscure the few simple elementary principles regarding micro-organisms and their action on wounds which should be impressed with direct and absolute clearness upon our students.

One aspect of the subject is deserving of our best attention at present. The tendency is to lavish all the care possible upon our methods of conducting an operation aseptically. This is prudent, but too little attention is paid to the subsequent treatment of the wound. The surgical dressing deserves more attention than it gets, and if certain individuals would turn their attention to the dressing and divert their minds for a little from the fixtures and upholstery of the operating theatre, they would be rendering more useful service to surgery.

A paper was recently published dealing with the dressing from a physical point of view,* by Preobajensky, of St. Petersburg. A fact which is now well recognized is stated, to the effect that wounds made under the strictest antiseptic precautions are often not sterile. It has been calculated, in fact, that only 15 per cent. of such wounds are sterile, the remaining 85 per cent. become contaminated with micro-organisms, often with pyogenic microbes. In spite of this fact a large number of the 85 per cent. heal by first intention. The chemical action of antiseptics on bacteria is no doubt of value in preventing the entrance of bacteria into the organism, but there are other considerations demanding our attention in our efforts to render these bacteria innocuous in wounds. The following considerations are culled from the paper by Preobajensky. The material of the dressing must be porous and permeable. The capacity for absorption varies with different materials, thus undressed hemp absorbs from 2 to 20 per cent. of its own weight of water, whilst charpie, gauze and cotton wadding absorb 186 to 312 per cent. of their own weight of water. The nature of the liquid also affects the amount of absorption. Thus a smaller quantity of blood will be absorbed than of water. To these factors must be added the hygroscopic and elastic qualities of the dressing material.

* "Les bases physiques du traitement antiparasitaire des plaies, par M. le Dr. M. J. Preobajensky, St. Petersburg. "Annales de l'Institut Pasteur," Tome XI, No. 9, p. 699. 1897.

A very pretty experiment is devised to show the direction of the current of fluid through an absorbent dressing under different conditions. A skein of charpie (very narrow thread-like strips of linen torn off so as to leave fringed edges), or a small roll of gauze is placed in a flask containing water. One end of the skein is immersed in the water in the flask, the other projects some distance beyond the mouth of the flask and externally lies at a point beneath the level of the fluid in the flask. The fluid first rises in the gauze by capillary attraction and then passing out to the extremity of the skein, it courses on by siphon action and drops readily from the free end of the gauze. If at some point in the gauze skein a small fragment of aniline blue (soluble in water) be placed, the part of the skein beyond that point becomes stained as the current carries the dye on. Raise the free end of the skein above the level of the fluid in the flask, then, if the rapidity of evaporation is sufficient, *e.g.*, if the air be dry, the blue travels on in the same direction as when there was siphon action. If on the contrary one prevents evaporation by such a simple device as putting a bell-jar over the flask, then the current is reversed, and the colored fluid passes towards the water in the flask. Absorbent cotton gives similar results, but it will be necessary to tease out the free extremity of the wool in order to favor evaporation. It is most interesting to observe that evaporation may further be facilitated by applying various powders which get wet because their molecular attraction for the water is greater than that of the wool, and they add their evaporation to that of their substratum of wool. Iodoform, charcoal, subnitrate of bismuth and other substances have been found to produce this effect.

Osmotic currents were also experimented with by immersing sacs of parchment in a fluid and causing a current into the sac by placing a gauze wick therein, which was exposed by a free end to the air and allowed to evaporate.

The nature of the dressing, and the external conditions of humidity and temperature necessarily affect the rapidity of evaporation and the result.

Experiments of a more interesting and suggestive type were conducted on animals to determine the influence of the dressing and other conditions of environment upon the processes of absorption from the surface of the wound into the body of the animal. The influence of the dressing, the effect of the application of various powders to the surface, the action in this regard of aqueous solutions, disinfectants, glycerine and oil, also the influence produced by the surrounding medium were noted. Certain substances were applied to the wound of such a nature that their poisonous effects upon the animal would be very obvious if they were absorbed. Those substances were: strychnine, ricin (powdered or in aqueous solution), blood, decomposed and putrid by

exposure to the air, pyogenic microbes, and the streptococcus of Marmorek.

In conducting the experiments with strychnine, white mice were used, and one hundred and fifty experiments were made. A wound was made by scraping the epidermis off with a razor, or a deeper wound was carried into the subcutaneous tissue. A seton or tampon of gauze powdered with strychnine or saturated with a solution of strychnine in excess is applied. If the subsequent dressings permitted of sufficient absorption of the wound into the dressing, and also of evaporation from the surface to the surrounding air, then the animal recovered, but if the dressing were not absorbent and evaporation were interfered with the animal died with symptoms of strychnine poisoning. The effect of powdered substances on absorption was also observed, and for this purpose coffee, charcoal, chalk, magnesia, talcum powder and iodoform were used for the experiment. The wound was first powdered with strychnine and afterwards with one of these powders. In most instances the animal survived, whilst it was killed if strychnine alone were used. From the variety of substances used it was evident that the beneficial result obtained was due to the absorption and evaporation produced by the powders rather than to their possible antiseptic action. Similarly liquids were experimented with, the ordinary antiseptic fluids being used --carbolic acid, 5 per cent., corrosive sublimate, 1 per cent., zinc chloride, 5 per cent., glycerine, oil, alcohol, ether and water. With carbolic acid and sublimate the exudate is increased, and if allowed to remain stagnant the animal dies of strychnine poisoning. The wound was first scrubbed with the lotion, and then the strychnine powdered on. If on the first symptoms of poisoning an absorbent dressing is applied, the animal usually recovers, but if a piece of impermeable protective be applied over the same dressing, the animal dies of strychnine poisoning. Thus by preventing evaporation by means of the protective one creates conditions favorable to the absorption of toxic substances by the skin. Similar results were obtained with alcohol, which, however, diminishes exudation; and with glycerine, which prevents the wound from drying. In the case of oil it was found that if the strychnine were applied before the oil, then death occurred, but if in the reverse order then the animal recovered. In other words the oil formed an efficient barrier to the entrance of the poison, and also an effective hindrance to evaporation.

As an example of a tox-albumen, ricin (the active principle of castor oil, a vegetable albumoid) was used, and guinea pigs employed for the purpose. This is a most rapidly fatal poison if absorbed or if injected subcutaneously. The material was powdered on the wound or applied in solution. It was found well to increase the exudation from the wound by appropriate applica-

tions, and to favor absorption into the dressing and evaporation from the surface by loose dressings and the use of powdered substances. An efficient dressing for the purpose was found to be first a layer of moist gauze, over which a layer of dry gauze. If the conditions of the absorbent dressing and of evaporation were efficiently realized the animal survived and the wound healed, but death rapidly occurred if these conditions were not fulfilled.

An instructive series of experiments was carried on with blood which had been allowed to become putrid by exposure to the air. Dogs were operated upon in the dissecting room under septic conditions without any attempt to carry out antiseptic details. In the first series of experiments the action of wounds under these conditions was observed, the application of the putrid blood being omitted. An incision 15 to 20 cm. long was made through the skin and the wound allowed to granulate. The only dressing employed was that of placing every day upon the wound a piece of gauze, which had been immersed in distilled water, over this dry gauze, and a bandage. These wounds healed without suppuration, and it is claimed that they did so because of the physical qualities of the dressings allowing of efficient absorption and evaporation. Putrid blood was now added in the second series of experiments. The toxic quality of this blood is proved by the fact that when injected into the vein of a dog it caused fatal results in twelve hours. The surface of a wound was first washed with water and then covered with the putrid blood. Healing by first intention occurred under the dressing similar to that employed in the first series of cases. If, however, with exactly the same conditions, there be added to the dressing a covering of impermeable protective, the animal will die of sepsis, unless, indeed, it succeeds in tearing the dressing off and in licking the sore.

Virulent cultures of anthrax were used in similar lesions of the skin in guinea pigs. The wounds were spread over with portions of a culture of the bacillus of anthrax in bouillon. With non-absorbent dressings the animals succumbed in two or three days. With efficient dressings the animals lived six or eight days, the dressings not having been removed.

The streptococcus pyogenes of Marmorek in its very virulent form was used extensively for experiment. For example, lesions in rabbits were treated with gauze steeped in a culture of this organism. Two rabbits were placed in a cage in which the air was kept very moist, thus preventing sufficient evaporation, and the animals died. Two other rabbits were similarly treated but were placed in a very dry atmosphere, where evaporation from the dressing was free; these animals recovered with but little irritation in the wounds.

The evidence we thus get from the experimental laboratory is precisely in accord with our everyday experiences. One has insisted

frequently on the necessity of changing a dressing the moment it is observed that the discharge has reached the surface. One has taught that under such circumstances there is great danger of septic infection of a wound. One is bound to admit, however, that the explanation offered has not been along the lines of that suggested by the experiments I have just narrated. It is quite obvious that the true explanation is that when the dressings become saturated with the discharge the absorbent quality of the dressings is destroyed and evaporation interfered with. A further lesson we learn is regarding the value of gauze both as a dressing and as a drain. It is of great value, for example, in draining every cul-de-sac in a case of purulent peritonitis. Recently in a case of this nature a child with suppurative appendicitis and general purulent peritonitis with profound septic poisoning, I contented myself by opening the abdomen and placing gauze drains in various directions without further interference. The child recovered after a very critical illness. A series of experiments was carried out by Preobajensky, in which he proved that the microbes themselves as well as their toxins were carried in osmotic currents by siphonage, by absorption, etc.

I have described these experiments in some detail because they appear to me, as a practical surgeon, to be of considerable importance. They explain many of our difficulties, and incidentally they clear up many of the discordant results which have been obtained by various experimentors who have not taken into account the physical qualities of the dressing, but attributed their results wholly to the action of the antiseptic substance used on the surface of the wound. It is obvious that Lister's protective was a mistake. True, it might not always interfere with the favorable results in a wound produced under antiseptic conditions, but undoubtedly it added an element of danger, and it is now, I think, pretty generally abandoned. A few weeks ago in operating on a case of empyema I demonstrated to my class the use of a piece of protective arranged in the manner which has been suggested, so as to have a valvular influence in bringing about expansion of the lung. Apart from this being in my opinion quite unnecessary, I satisfied myself that it had a positively pernicious effect. The child's temperature kept up when I looked for a fall, and in the course of a few days it suddenly occurred to me that my protective was the cause of it. I replaced it by an absorbent dressing, and next day the temperature was normal. It is quite obvious that one cannot carry out the conditions necessary to produce a dressing in all instances which is faultless as to its physical properties. It is not claimed that these physical properties are even as important as the antiseptic qualities of our dressing, but we should exercise the utmost care to establish conditions which should favor absorption and evaporation from our wounds.

Undoubtedly of great importance in securing the protection of the tissues of the body from the invasion of bacteria is the vital function of the tissue cells in their destructive action on microbes. The story of this discovery forms one of the most romantic pages in the history of modern scientific medicine. In 1884 Metschnikoff first published his researches in connection with an experiment upon the water flea, the daphnia, and its power of dealing with the attempted inroads of a parasite in the form of a single-celled yeast plant (*monospora bicuspidata*). The parasites are apparently swallowed by the daphnia, and the spores of the yeast plant become loose in the stomach and penetrate its walls, and thus find their way into the tissues of the animal. Metschnikoff observed that each invading spore became surrounded by blood corpuscles, and as a result the spores undergo degeneration and are destroyed. "The blood corpuscles unite to form firmly granular pale plasmodia, which exhibit amœboid movements and contain the granular remains of the spores. When, however, too many spores reach the body cavity, or when for some reason the spores remain uninjured, disease occurs, the spores germinate and are carried all over the body." Metschnikoff subsequently experimented with the anthrax bacilli in frogs, and made some early observations in connection with erysipelas in man. Upon the results observed in these experiments he built up the beautiful theory of phagocytosis and its relation to immunity; conclusive proof was soon forthcoming from a host of observers that leucocytes and other cells of the body were thus capable of taking up bacteria into their substance. Contrary to Metschnikoff's early view, however, it became evident that the presence of living microbes in the substance of a cell does not necessarily mean destruction of the microbe; it might, on the contrary, and does sometimes mean destruction of the cell by the microbes.

We have not time within the limits of this paper to discuss phagocytosis, or that apparently somewhat co-related condition in connection with tissue activity known as chemotaxis, *i.e.*, the property possessed by certain chemical agents, whether secreted by bacteria or of other origin, of attracting or repelling leucocytes. But a reference to the more recent additions to our knowledge of the conditions influencing the healing of our wounds would be wholly incomplete if we omitted mentioning these phenomena. In these processes we have demonstrated another safeguard against the inroads of bacteria—that furnished by the vital activity of the individual leucocytes and of other cells of the body.

Some of us remember how delighted Lister was to learn of the phenomena of phagocytosis because, very early in his experience, he realized the fact that it was exceedingly difficult, often impossible, to get an absolutely sterile wound, and until the doctrine of phagocytosis was propounded he could see no reason why every

wound containing microbes should not become septic and permit of unlimited increase of the number of microbes such as would occur in any suitable artificial culture medium. As a fact he found that many of these wounds healed if the dosage or the virulence of the bacteria were not too great. We now know that destruction and disappearance of the bacteria occur in such cases by phagocytosis, and healing then takes place by first intention.

It is well observed that the chances of absorption of toxins or of microbes are greater at the time of operation, when we have open blood vessels and lymphatics, than at any other. This being the case, it has been suggested that we should employ substances in our wounds which provoke the coagulation of the blood. Alkalies and soap, for example, arrest coagulation, and should not be brought in contact with the wound. Later, however, the establishment of healthy granulation tissue is a great safeguard against absorption, and we therefore recognize that the early treatment of the wound, until such time as granulation has been established, is to be carried on with scrupulous care.

Let me direct your attention for a moment to a recent paper published in Zeigler's *Beiträge*, by Dr. Jürgelinus, from the laboratory of Prof. Pawlowsky in Kiev*) regarding the effect of granulation tissue in preventing the absorption of micro-organisms or their products into the organism. The technique of the experiments carried out was as follows: An aseptic wound was made in the back of an animal of sufficient depth to divide muscular fibre. After checking bleeding, the wound is dressed with sterilized gauze and an aseptic bandage applied. No antiseptic fluid is employed. After three to six days, when healthy aseptic granulation tissue is formed, a pure culture of a pathogenic microbe is implanted upon the granulation tissue. After a limited period the animal is killed by chloroform, and the condition of the wound and of the internal organs is investigated. Two varieties of dressing were used, one in which a waxed cloth (really comparable to protective) was placed on the surface of the wound and then gauze dressing and a bandage; the other, in which loose absorbent gauze was used, omitting the waxed cloth. Experiments were conducted with the staphylococcus pyogenes aureus on two guinea pigs with a granulating wound of four days' standing, and on a rabbit with a granulating wound of five days' standing. A pure bouillon culture of staphylococcus pyogenes aureus was implanted on the granulating surface in each case. After twenty-four hours the animal was killed by chloroform. A rich culture was found on the surface of the wounds, but the internal organs of the animal were sterile. Control experiments were carried out at the same

*) "Ueber die Durchgängigkeit des Granulationsgewebes für pathogene Mikroorganismen"—Beiträge zur Pathologischen Anatomie und zur allgemeinen Pathologie. XXIX. Band Heft 1, p. 92. 1901.

time, the staphylococcus being implanted upon perfectly fresh wounds made under similar precautions to the others. In these not only was a rich culture found on the surface of the wounds, but the internal organs also gave cultures of staphylococcus aureus and no other important microbes. From this experiment we are forced to believe that granulation tissue acts to a certain degree as a preventive against the entrance of micro-organisms (staphylococci) into the body.

Similar experiments were conducted on three rabbits and one dog with granulating wounds of from three to five days' standing, with bacterium coli commune. Twenty-four hours after implanting the culture the animals were killed and culture found on the wound surface, but none in the internal organs. Whilst with control animals with perfectly fresh non-granulating wounds a culture was obtained not only from the wound surface but also from the internal organs. Similar results were obtained in three guinea pigs with the use of the bacillus pyocyaneus. Still more remarkable results were obtained in experimenting with the anthrax bacillus. Here observations were made on the conditions of absorption in a granulating cavity. In a four months' old dog the knee was resected, and five days after he inserted a culture of anthrax. The dog remained alive, whilst the control animal died after five days.

Jürgelinas also conducted a most interesting series of observations on the granulation tissue of infected wounds as studied under the microscope. The fate of the bacteria in the granulation tissue and in the exudate from the wound was observed. Gram-Weigert's method of staining was employed, and the tissue examined at intervals of from four to twenty-four hours after inoculation. Bacilli were found in the peripheral portion of the granulations. They stained well and were well formed. In the twenty-four hour preparation the mass of bacilli had diminished. In the exudate, the first hour after inoculation the bacilli were normal in form and stained well. In later preparations they stained more feebly. In a sheep, which died of the infection, bacilli were found in all sections of the granulation tissue chiefly in the spaces between the cells and in the blood vessels, the latter being almost blocked with them. Phagocytosis was very feebly noticeable, but it was observed here and there. In more or less immune animals bacilli were present in the superficial part of the granulation tissue, but their number was small. Each bacillus appeared a little swollen, and stained feebly, but there was no marked evidence of degeneration. In the section six days after infection the granulation tissue was wholly devoid of bacilli. On examining the exudate after the first hour the bacilli appeared as in the other animals, but after that they appeared granular, aggregated sometimes, and thickened, staining feebly. Phagocytosis

is not observed, the death of the bacilli being apparently determined by extra cellular processes.

We conclude, therefore, from this series of experiments that uninjured granulation tissue acts in most cases as a barrier against the inroads of bacteria into the body. The bactericidal property of the cells of granulation tissue and the phagocytic processes also of the leucocytes play a twofold role in protecting the animal against infection.

These experiments and observations demand our most careful consideration, and should guide us to some extent in our practice. The ideal surgical dressing may not as yet be at hand. My favorite dressing is plain sterilized gauze, and for some years I have first powdered my wound with a powder composed of acetanilide, 1 part, and boracic acid, 3 parts; over this the gauze applied has been wrung out of carbolic acid, aqueous solution 1 in 40, then dry gauze, then a bandage. This dressing seems to fulfil the conditions as to the physical qualities necessary, it combines also the requisite antiseptic precautions, and I find that it is very satisfactory.

It is extremely interesting to observe that whilst we are able nowadays to employ rational methods of treatment on a true scientific basis, good results were often obtained by our predecessors working from a purely empirical standpoint. We speak to-day of the necessity of absorbent dressings and of the value of providing free evaporation; formerly similar effects were produced upon wounds, but in a much less efficient manner, by the use of a drainage tube, the value of which was recognized over three centuries ago. Ambrose Paré mentions their value in his work published in 1579. It was pure empiricism then, however. The comparatively vague ideas he has of the anatomy and physiology of the body, and the entire absence of any scientific basis for the use of the drainage tube may be imagined from his description of a fracture of the skull. After narrating the circumstances which led to the injury, he says: "I trepanned him, and after I had done, some days after, I took out some four splinters of broken bone; and I put in a plain leaden pipe (I insisting the patient ever, when I dressed him, to hold down his head, to stop his mouth and his nose, and then strive, as much as in him lay, to put forth his breath), much sanious matter came forth, other filth which stuck more fast I washed with a detergent decoction, and I did so much, God blessing my endeavors, that he at length recovered.' Paré used a pipe of gold, silver or lead, for wounds of the chest, and a great sponge steeped in aqua vitae was wrung out and laid over the orifice of the tube in order that air might be prevented from entering, and that it might help to draw forth the discharge.

The French surgeon, Chassaignac, was the first to use the

drainage tube extensively in modern surgical practice. We all know the importance which was placed upon the use of the drainage tube by Lister in the early days of antiseptic surgery. We are only now, however, beginning to appreciate its true value, and, as we know, more favorable results are in many instances obtained by securing drainage by other means than through a tube.

The recognition of the principles of anatomy, physiology, pathology and bacteriology, and along with these chemistry and physics, is responsible for the great advances in surgery in recent years. In this age we must not be wedded too closely to special methods; we must be prepared to improve these as advances are made in the sciences upon which our treatment must be based. We too slavishly follow authority on many occasions. We learn much by reading history, and if we studied history more we would become convinced that it is sometimes salutary to "kick over the traces." For example, we owe the tremendous advance in the knowledge of anatomy in the sixteenth century to the courage and determination of Vesalius. At that time Galen was still the authority whom no one but Vesalius had the courage to challenge. Galen had drawn his knowledge of anatomy chiefly from dissections of the monkey. Adverse critics attacked Vesalius, his old teacher Sylvius being one of the most bitter. When Sylvius got worsted in the controversy, and was at last forced to make admissions that some of the statements of Galen were not in accord with what was found in the human body, he covered his retreat by insisting that the human body had changed since Galen's time, "and," he added, "not for the better." It was deterioration he saw, not improvement, although the standard of excellence chosen by Sylvius was Galen's description of the ape. "History repeats itself"—witness the hostile critics who greeted Simpson in his efforts to champion the use of anæsthetics; and, as we have had occasion to observe, Lister likewise encountered a fierce and unreasonable antagonism.

Let us therefore endeavor to take every advantage of the advances made in science, and never hesitate to employ new methods and abandon old ones when we are convinced that such a course is demanded of us. We cannot do better than follow the advice laid down by Lord Lister in his address before the British Association, "Let the thing tried be that which, according to our best judgment, is the most likely to promote the welfare of the patient. In other words, Do as you would be done by."

COMPLICATIONS AND DEGENERATIONS OF FIBROID TUMORS OF THE UTERUS AS BEARING UPON THE TREATMENT OF THESE GROWTHS.*

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(*Author's Abstract.*)

TRADITIONAL teaching considers fibroma of the uterus common, that they tend to undergo spontaneous cure at the menopause, and only rarely produce grave symptoms or cause death. This teaching has been combated from time to time by those having to deal with grave conditions, the result of fibroid tumors. In 1853, the essay of Atlee† appeared, and consisted largely of a description of serious conditions resulting from fibroid tumors, together with the earnest plea for their radical surgical removal. Hemorrhage has been considered the chief danger arising from fibroid tumors; but it is now appreciated that patients suffering from these growths are also subject to many other risks that arise from necrosis, myxomatous and cystic degeneration of the tumor, calcareous infiltration, or the associated malignant disease of the body of the uterus, or cervix, and such complicating diseases of the uterine appendages as ovarian tumors, pyosalpinx, salpingitis, etc. Besides these the more remote effects upon the alimentary tract, the cardio-vascular, urinary and nervous systems may cause death or lead to continued invalidism of the patient, independent of the natural history of the tumor itself. The profession has been too prone to be guided by the teachings of the past rather than by the more careful observations of the present, in estimating the risks of patients suffering from fibroid tumors, and the chief purpose of this paper is to present in detail the nature and complications of fibroid tumors as they are met with in actual practice. Accurate tables of a considerable number of cases with their complications are rare, and I wish to report 213 cases in which various operations have been performed. This contribution includes all cases of operation for fibroid tumors in my practice, and the study of this group of cases should give a more accurate picture of the condition of patients suffering from fibroid myomata of the uterus than any merely theoretical consideration of the subject. It is apparent from the following analysis that in actual practice fibroid tumors do not commonly occur as an isolated, uncomplicated, morbid condition.

* Read at the Ontario Medical Association Meeting, Toronto, June, 1901.

† "The Surgical Treatment of certain Fibroid Tumors of the Uterus heretofore Considered Beyond the Resources of Art," Trans. Amer. Med. Ass'n, 1853, Vol. VI., p. 547.

In the 218 patients operated upon for fibromyoma uteri to May 24th, 1901, the following complications were encountered:

Appendicitis	4
Bilateral hydrosalpinx	8
Unilateral hydrosalpinx	5
Hematosalpinx	1
Calcareous infiltration	5
Cystic degeneration of ovaries	2
Ovarian cyst with twisted pedicle	1
Ovarian cyst, bilateral	2
Ovarian cyst, unilateral	19
Ovarian cyst, suppurating	1
Bilateral dermoid cyst ; umbilical hernia	1
Dermoid cyst, suppurating sinus through abdominal wall ..	1
Dermoid cyst with twisted pedicle	1
Intraligamentous development of fibroid	10
Retroversion of uterus	3
Procidentia of uterus	3
Parovarian cyst	2
Ectopic pregnancy	3
Papillary carcinoma of both ovaries	1
Abscess of ovary	1
Pyosalpinx, bilateral	5
Pyosalpinx, unilateral	3
Salpingitis, bilateral	2
Salpingitis, unilateral	5
Myxomatous degeneration of tumor	5
Cystic degeneration of tumor	5
Necrosis of tumor	12
Adenocarcinoma of body of the uterus	3
Epithelioma of cervix uteri	4
Sarcoma	2
Syncytioma	1

We may divide these cases, *first*, into those which would lead to a fatal result; *second*, those which would threaten the life of the patient; and *third*, those which would involve more or less invalidism. Including under the first heading the ovarian tumors, the cases of ectopic pregnancy, of abscess, pyosalpinx, cystic degeneration, and necrosis of tumor, and of malignant disease of the body of the uterus, we have a total of 66 isolated conditions, the presence of which would tend to a fatal issue without operative intervention. To these must be added five cases of carcinoma of the uterus in which hysterectomy was not performed, making a total of 71 cases. Under the second head, of "complications threatening the life of the patient," would be included the cases of appendicitis, of hydro- and hemato-salpinx, parovarian cyst and myxomatous degeneration of the tumor, found in a total of 25 cases. Of conditions leading to a more or less permanent invalidism of the patient, we may include calcareous infiltration, cystic ovarian degeneration, intraligamentous degeneration of fibroid, retroversion and procidentia of the uterus, and salpingitis

—30 in all. From this, probably a moderate estimate would be that 78 of these patients would have died of complications if the fibroid tumor had not been operated upon. Besides this, it is difficult to estimate the number of deaths that would have resulted from symptoms produced by the tumors themselves, such as hemorrhage, degeneration of the heart and kidneys from chronic anemia, the pressure of the tumor upon the ureters and intestines, or the increase of intra-abdominal pressure interfering with the functions of the alimentary canal; the tendency to contract intercurrent diseases such as thrombosis and embolism from an associated phlebitis; or septicemia from necrosis of the tumor. To these must be added the risks of pregnancy and parturition, when complicated by the fibroid tumor. It can hardly be considered as other than moderate to estimate that 15 of these patients would have died eventually as a result of the presence of the tumors, independent of the complications. This would make a total of 93 deaths in 218 cases, as a result of the tumors themselves or their complications, a mortality of 42 per cent., and even should a difference of opinion occur as to the probable history of the several complications, this difference of opinion would merely take away a small number of the list of deaths and add to the list of invalids. I am not familiar with similar complete tables of the complications of fibroid tumors based upon a definite number of cases, which would give a basis for comparison, but Martin (A. Martin, "Pathology and Therapeutics of Diseases of Women," Boston, 1890, pages 268-272) reports 57 serious complications of fibroid tumors met with in 205 cases. But this includes no complications due to diseases of the uterine appendages. The cases of cancer and sarcoma of the uterus and the large ovarian tumors might perfectly well have had a different classification, thus decreasing the number of fatal complications, but even allowing such a different classification, there can be no doubt that at least one-third of my patients would have died as a result of the tumors or their complications. Two patients were operated upon during pregnancy. Mrs. A., aged 36, multipara, was pregnant two months, and on examination was found to have a freely-movable, soft, pedunculated abdominal tumor, believed to be an ovarian cyst. Upon operating and delivering the tumor, it was found to be a soft fibroid, with a slender pedicle that was injured in the delivery of the tumor, making the removal of the fibroid preferable to its return. The patient recovered, but unfortunately aborted subsequently. However, she later gave birth to a living child. The second patient, aged 37, had four children, and suffered markedly from pressure symptoms, due to a large, rapidly-growing fibroma. Pregnancy was suspected, and was believed to add to the indication for hysterectomy, because of the size of the

tumor. Hysterectomy was successfully performed, and the specimen showed the existence of twin pregnancy of six weeks' duration.

In the twelve cases of *necrosis* of the tumor, six were submucous fibroids in which the tumors were removed per vaginam. Two died, one from embolism resulting from a septic inflammation, antedating operation and persisting after it; the other from advanced endocarditis. In all six cases of necrosis in which abdominal section was done, the patients were in bad condition from septic absorption. All would probably have died from septicemia without operation. Three succumbed from septicemia, one died of embolism of the brain. Thus, of the 12 cases of necrosis, six died, and six recovered, indicating the extreme gravity of this condition. A striking illustration of the fact that the *menopause* need not bring relief, is the case of Mrs. C., aged 67, who had had one child, forty years ago. She consulted me for the relief of intolerable bladder symptoms. She suffered from hemorrhage of the uterus from the age of 35, until the menopause was established at the age of 52. The examination showed a multinodular fibroid tumor, the pelvic portion of which was calcareous, and it was found that this portion, by pressure upon the right ureter, had caused degeneration of the corresponding kidney. At the urgent request of the patient, the operation was performed March 6th, 1895, in spite of a bad prognosis, but she died four days later, of suppression of the urine.

A second case, indicating the persistence of tumor symptoms after the menopause, was that of a patient who suffered from the age of 35 to 53 from uterine hemorrhages, and when 70 years of age, after a drive over a rough road, the tumor became necrotic, and an abscess formed, rupturing into the bowel. The patient died from sepsis after an operation to secure drainage.

The disappearance of fibroid tumors after the menopause and after labor has not been noticed in my experience, although, in one case, seen fifteen years ago, a fibroid tumor was found to have gradually lessened in size after labor, as compared to its size before pregnancy. It is evident, therefore, that the disappearance of fibroid tumors as the result of the menopause or pregnancy, is merely one of the curiosities of the history of these growths, and is not to be expected.

The ages of the patients operated upon, grouped in decennial periods, are as follows:

Under twenty	1
Between twenty and thirty	6
Between thirty and forty	77
Between forty and fifty	76
Between fifty and sixty	20
Between sixty and seventy	7

The remaining 31 cases were operated upon per vaginam, and

the histories are not complete. One was between fifty and sixty, and a number between forty and fifty. Indicating the occurrence of these tumors in early youth, one of the patients was aged seventeen, one twenty-two, one twenty-four, and one twenty-six. The patient, aged seventeen, began to menstruate at thirteen, and was regular for five months. Menstruation then ceased for two years, except for two periods. Following this a severe metrorrhagia developed, and when the patient consulted me, she was in a condition of extreme debility from loss of blood. The tumor choked the pelvis and extended half way to the umbilicus. It is of great interest that 21 patients, including one operated upon per vaginam, were between fifty and sixty years of age, and seven patients between sixty and seventy years of age. Twelve per cent. of the patients were above fifty years of age when their symptoms caused them to seek relief in operation, a time, according to classic teaching, in which most of the patients should have regained their health as a result of the influence of the menopause. It is not possible to give the exact age at which menstruation ceased in patients operated upon after the fortieth year, but a large percentage menstruated after fifty, and one as late as fifty-five years. No fact is more evident in connection with the history of fibroid tumors than that the menopause is delayed for from three to ten years.

The relation of fibromyomata to *sterility* is indicated by the fact that only 91 of the 218 patients operated upon had been pregnant, and of the remainder a number were unmarried. In considering the complications, no mention was made of adhesions, although in numerous cases intestinal, appendicular and vesical adhesions were a marked feature. Especially was this true when the tumor was associated with forms of salpingitis. Adhesions cause pain, constipation, digestive disorders, and add to the operative risks.

The tendency to *phlebitis* and *embolism*, both before and after operation, in cases of fibroid tumors, is well recognized.

A striking case was that of Mrs. D., aged 46, multipara, who, while standing upon a ladder working, with the arms extended, was suddenly seized with violent pain in the abdomen, followed by collapse and grave peritonitis. After several weeks the peritonitis improved, but phlebitis, involving the veins of the left side of the neck and axilla, developed. Several weeks later death resulted from embolism of the brain. The peritonitis was due to the torsion of a pedunculated fibroid, leading to necrosis of the tumor. Another death, from embolism, occurred in a patient who was operated upon when septic, as a result of a fibroid polypus. Death occurred twelve days after operation, after a febrile course. Phlebitis following operation for fibroids is quite common, and its precise etiology is obscure. It is difficult to prove or believe

that all cases result from infection. The most prominent characteristic of a series of cases of post-operative phlebitis is that the patients are almost invariably anemic and prostrated.

Anemia was present in a large percentage of the cases of fibroma, and in some the degree of anemia was extreme.

In the case of Mrs. E., aged 45, the skin was waxen, the nose and ears were characteristically transparent. She had been bleeding almost constantly for months. Examination showed a number of fibroid nodules, also a small tumor of the right ovary. To control the hemorrhage until her condition could be improved, the patient was curetted on the 19th of January, 1901. On the 23rd the blood examination showed erythrocytes, 2,325,000; hemoglobin, 10 per cent.; poikilocytosis, marked; leucocytosis, marked and of the usual type. February 6th the erythrocytes numbered 2,760,000; hemoglobin, 35 per cent.; and by March 4th the erythrocytes numbered 3,460,000; hemoglobin 45 per cent. A successful radical operation was later performed. In others of the grave cases of anemia the result was less fortunate. The risks of shock, of edema of lungs, and septic infection after operation, are all increased in anemic patients. The attitude in advocating conservative, or more properly expectant treatment, in cases of fibroids with hemorrhage, is difficult to appreciate. To agree that when a patient has become profoundly anemic from hemorrhage, operation is indicated, but to oppose operation before that state has been reached, as is often done, seems illogical. It would seem much better to operate early and thus save the patients months and years of invalidism, reduce the immediate operative risk, and shorten the post-operative period of convalescence. When anemia has become profound and of long duration, at times it is incurable, or the treatment must be continued many months to bring about a cure. The secondary effects of chronic anemia are also overcome with difficulty. In certain cases it may become imperative to operate, despite the transgression of Mikulicz's rule, never to operate in any case when the hemoglobin is below 30 per cent.

Over fifteen years ago Hoffmeyer (Hoffmeyer, M. Zur Lehre vom Shock. Zeits. für Geburts und Gynäk., xi. Band, 1885, p. 366) collected seven cases of uterine fibromyoma, in one of which death resulted from pulmonary embolism, in two from a high grade fatty degeneration, and in four from brown atrophy of the heart muscle. In a number of my own fatal cases, the immediate cause of death was the rapid onset of pulmonary edema. Whether, in these cases, the pulmonary edema was the result of embolism, or myocardial degeneration, I am unable to say, as thorough *post-mortem* examinations were difficult to secure.

Carcinoma and fibromyoma being such common diseases, it would be expected that they should frequently co-exist in the uterus. In proportion to its relative frequency, the adeno-carci-

noma of the uterine body is more often found in this association than is the more common squamous epithelioma of the cervix. That the irritative action of the fibroma should predispose to the development of the adeno-carcinoma, would seem only slightly less plausible than that laceration of the cervix should predispose to that of epithelioma of the cervix. Clinical experience and embryological studies both refute the idea, however, that the benign tumor may undergo carcinomatous degeneration. Even the penetration of the capsule of the fibroid by an adjacent carcinoma is extremely rare. In two of my cases the carcinoma had reached the capsule, but there was no tendency to penetrate the substance of the fibromyoma. Sarcomatous degeneration of fibroids would seem to be possible, although the close similarity between fibro- and spindle-celled sarcoma and fibromyomata renders it difficult for the pathologist to determine whether a given growth has been malignant from its inception, or has been the result of a sarcomatous degeneration in a fibroid. According to classical teaching, a *fatal termination* in the course of fibroid tumors is very rare. At the present time it is not difficult to understand why this is so, as when the condition of the patient becomes grave, and hemorrhage, repeated attacks of peritonitis, digestive, vascular, or urinary disturbances occur, they are usually submitted to operation. Patients operated upon when in bad condition swell the mortality of operations, and also greatly increase the lists of those making poor recoveries after operation. Doubtless in the future, the number of cases dying as a result of fibroid tumors or their complications, will be less than in the past, because in a larger percentage an earlier operation will be performed. Numerous cases of death from fibroid tumors can be found in the literature. Bishop, E. S. ("Uterine Fibroma and Myomata," 1901, pp. 27-31) reports 37 fatal cases which he has collected. If the cases of fibroid tumor of the uterus which have come under my observation can be taken as representing these growths as a class, it is a fair conclusion that death will result in more than one-third of the cases, while in more than one-quarter the result will be chronic invalidism. The number of invalids would be increased by the number of cases ultimately ending in death, so that from one-half to two-thirds of the patients having fibroid tumors, which have come under my observation have been confirmed invalids. Of the remainder, but few have not been incommoded as a result of the presence of the tumor. The percentage of cases in which tumors have been found more or less accidentally, is quite small. This estimate of the gravity of fibroid tumors is radically opposed to the classical teaching. In gratifying contrast are the results which can be secured through the resources of modern gynecology. The mortality of hysterectomy and myectomy is variously estimated from 2 to 10 per cent. In a series of 345 cases pub-

lished by myself, 1897,* the mortality of hysterectomy by supravaginal amputation, in the hands of five American gynecologists, was 4.9 per cent., and in a series of 100 total hysterectomies, the mortality was 10 per cent. Olshausen reports a mortality of 5.6 per cent. in 806 supravaginal hysterectomies, contrasted with 9.6 in a collection of 520 cases of total extirpation. According to Bishop (L. C.), Martin reports 35 total extirpations, with a mortality of 28 per cent.; Doyen, 60, with a mortality of 2.6.; A. Martin, 81 cases, with a mortality of 7.1 per cent. The advocates of a vaginal hysterectomy for fibroid tumors report equally as good, if not better, results. The results of myomectomy indicate that this is more dangerous than hysterectomy, although in the hands of trained men, the results are excellent. Kelly reports 97 myomectomies, with 4 deaths, which is to be contrasted with 307 hysterectomies with 15 deaths, or a mortality of 4.8 per cent. (Kelly, H. A., "Abdominal Myomectomy," *Trans. Amer. Gynec. Soc.*, 1898, Vol. xiii., p. 223; 1900, Vol. xxv., p. 213.)

In a private communication, in 1898, MacMonagle reports 65 cases of myomectomy, with no deaths. We are now able to contrast the mortality of fibroid tumors, including that of their complications, 33 1-3 per cent. with the mortality of operation less than 10 per cent., also the morbidity incident to the history of fibroid tumors as compared with that which follows operation, which is very much in favor of the operation. The conclusion is inevitable that the proper treatment of fibroid tumors of the uterus is their early removal, for this not only greatly lessens the mortality, but what is perhaps more important, saves the long period of invalidism which is otherwise inevitable. Believing that the best treatment for fibroid tumors in general is their early removal, are there no exceptions to this rule? The best answer to this is that each case must be decided upon its merits. My individual experience is that small multinodular subperitoneal fibroids in women of 40 years of age, or more, are the least apt to grow and cause serious symptoms. Conversely, submucous and intramural fibroids in younger women are the most apt to develop and cause serious trouble. I have seen few fibroids that were not producing symptoms, and it is therefore my belief that the percentage of cases is small in which operation is not more advisable than expectancy.

*"The Development and Present Status of Hysterectomy for Fibromyomata," by Chas. P. Noble, *Trans. Amer. Gynec. Soc.*, 1897, Vol. 12, page 59.

PULMONARY TUBERCULOSIS: ITS TREATMENT IN SPECIAL SANATORIA.*

BY J. H. ELLIOTT, M.B.(TOR.), GRAVENHURST.

THE Hygienic and Dietetic Treatment of Phthisis, the fundamental principle of sanatorium methods, is not by any means of recent origin, although it is only within the last quarter of a century that there has been a general acceptance by the profession at large. I would be quite within the mark if I should say that only the last decade has seen an adoption of this treatment outside those specially interested in lung diseases.

Hippocrates expresses his belief in the curability of the disease, "If the patient is treated from the beginning he will get well," and tells us to have the patient walk if he feels benefited thereby; if not, to rest as much as possible. Pliny, Celsus and Galen, advised life in the country, and pine forests.

It may be fairly claimed that English physicians were the first in modern times to advocate aerotherapy in the treatment of consumption. Bodington, of Warwickshire, in 1839, treated such patients "in a special building with systematic arrangements in regard to exercise, diet and general treatment, with the watchfulness daily, nay hourly, over a patient of a medical superintendent" (1).

Bennet, himself cured by aerotherapeutic measures, writes (2): "My consumptive patients live in the open air, sleep with their windows more or less open, wash the entire body daily with cold water, live on the best food and wine they can get, take as much of it as they can digest."

In spite of Bennet's good results, the English profession were very slow to adopt his methods of treatment.

The sanatorium treatment of pulmonary tuberculosis may be said to have been promulgated by Brehmer of Goerbersdorf, who, through the influence of his friends, Humboldt and Schönlein, opened his sanatorium in 1859. The remarkable increase of sanatoria throughout Germany is directly traceable to the work done by Brehmer, and by Dettweiler, who was first a patient and later an assistant in the Goerbersdorf Sanatorium.

In Brehmer's institution exercise was all important in the treatment of his cases. Dettweiler, as the result of his observa-

*Presented at the Annual Meeting of the Ontario Medical Association, Toronto, June, 1901.

1. Knopf—*Prophyl. and Treat. Pul. Tub.*, 1899 p.n.

2. Bennet—*On Treatment of Pulmonary Consumption by Hygiene, Climate and Medicine*, 1871.

tions, then became convinced he could secure better results with a "rest cure." In 1874 he was enabled, with the aid of the physicians at Frankfort, to open the Sanatorium at Falkenstein in the Taunus. This was for paying patients. The subscribers were to receive 5 per cent. on their investment; then after perfecting the institution, all surplus was to go towards the erection and maintenance of a sanatorium for the poor. This was opened in 1892, at Ruppertshain, the first sanatorium in Germany for the poor. It now accommodates some ninety patients, and is being enlarged.

Though one sees a great variety in the style of building, there are two noticeable types, the European system, where 50 to 200 patients are housed under one roof, as in a hospital, and the American cottage system, originating with Dr. Trudeau, and since adopted in the Loomis Sanatorium at Liberty, N.Y., and in the Muskoka Cottage Sanatorium. Both plans have their advantages and disadvantages, to discuss which, however, is outside the scope of this paper.

It will be hardly necessary for me to bring forward proofs that consumption is curable, that taken early it is perhaps one of the most curable of chronic diseases, nor need I burden you with statistics showing the excellent results universally obtained in sanatoria. It is indeed difficult to properly tabulate the results of the various institutions, from the great difference in the nomenclature adopted by their medical directors. Where one uses the terms absolute and relative cure, another will use apparent cure and disease arrested, another, again, will use the term arrested cases, covering both the former conditions. Again, there must be great difference in the results, from the fact of some sanatoria accepting almost all cases which present themselves for treatment, while others accept only the earlier or more favorable cases.

Speaking generally, it may be said that from 50 to 70 per cent. of the incipient cases are restored to health, while from all classes from 15 to 30 per cent. are reported cured or arrested, in 60 to 70 per cent. a marked improvement.

Soon after entering the sanatorium there is noted in most cases an improved appetite, a gradual gain in weight, and a decline in the evening temperature. With the improvement in general health night sweats disappear without medication, the cough and expectoration notably lessen, and the patient sleeps soundly until morning. The principles of treatment generally adopted are:—

1. A continual life in the open air, with rest or exercise as indicated.
2. A liberal, suitable diet.
3. Medicinal treatment, according to indications, and to a great extent symptomatic.

4. Hydrotherapy.

5. A strict medical supervision of the patient's daily life.

This practically means placing the patient under the best possible conditions to strengthen the whole organism, by living an hygienic life, amidst hygienic surroundings, to so increase the resisting powers that not only is the further progress of the disease stayed, but with the vital energy so increased, nature is able to reassert herself, and overcome the disease.

Life in the open air does not mean two or three hours out of doors in the morning, the same in the afternoon, with perhaps an hour in the evening, the remaining 15 to 18 hours spent about the stove, and in a bedroom, with the window open an inch or two. The good resulting from having been outside will be more than overbalanced by the many more hours of indoor life. It means 24 hours each and every day in the pure, out-of-door air; 9 to 13 hours spent daily out of doors, summer or winter, rain or shine, the meals taken in an airy, well-ventilated dining-room, with, in summer, the windows wide open, or out altogether, and sleeping in a large bedroom, with here also the fresh air of heaven finding no obstruction to its free entrance.

When there is a daily rise in temperature there is active disease in progress. This means an increased combustion and waste of the tissues. We know also that in exercise of any sort muscular movement necessitates combustion. If then exercise is indulged in, there is a double consumption of the nitrogenous constituents, a literal burning of the candle at both ends, and, if long persisted in, causes irreparable injury.

The object of the "rest cure," in febrile cases is to reduce muscular exertion to the least point consistent with the ingestion and proper assimilation of a good diet.

Whether a patient is to take exercise or remain absolutely at rest is decided by the temperature curve. A patient admitted with an evening temperature of, say, 103 degrees, is put at once to bed, and remains until there is no rise above 100.5. If this point is not exceeded for three or four days the patient may get up for the morning, and begin very short walks, going to his room again shortly after the mid-day meal, not leaving it again until the next morning. If with this the temperature still slowly drops, the amount of daily exercise may be gradually increased.

It may be noted with some patients, whose evening temperature does not rise above 99 degrees, or 99.5, that, after a long walk, the thermometer may register 101 degrees, or even higher. This, of course, means that the exercise has been too much. *The thermometer should always be the guide in prescribing or restricting exercise.* Two or four hourly observations of temperature are made for a few days after admission, and then morning and evening, as long as there is a departure from normal. Contrary to the rule

in other diseases, the patient is taught to use the thermometer himself. There are certain patients who, when they find an evening elevation of temperature, will worry, but these are very few. The intelligent use of the instrument is soon easily taught, and the patient then knows within what limits he may or may not exercise, and is also in a position to report to the nurse or physician any rise in temperature after he has been for a time afebrile.

In a few sanatoria, notably Nordrach, the temperature is always taken in the rectum, being considered a safer guide than when taken in the mouth. A number of observations I have made upon patients show definitely that the subnormal temperature of 95 degrees, or even 94 degrees, often seen when taken by the mouth, is not registered as such in the rectum, and in these cases will read 97 degrees and 98 degrees. The normal rectal temperature is about 1 degree higher than that of the mouth.

Some object from an aesthetic point of view, but as the temperature is always taken in the patient's room, this can scarcely be considered, if we really appreciate the value of a correct temperature record. More especially in the cold weather is the mouth temperature misleading. On more than one occasion when a patient has returned from a walk on a winter's day, with a flushed face, have I found with a mouth temperature of 99 degrees, or 99.5, a rectal temperature of 101 degrees to 102 degrees. I would not advise this method in all cases; but it certainly has its use, and is valuable where properly used.

The "rest cure" has its modifications in different sanatoria. At Falkenstein and Hohenhonnef, the febrile cases, as a rule, are placed in rooms which open out on a balcony, where the patient may spend the greater part of the day. When able to take gentle exercise the Liegehalle are used. These, as a rule, are on the ground floor, both in Germany and America. At Edmundsthal, near Hamburg, and Belzig, near Berlin, there are large protected balconies on the first floor. On these verandahs, or shelters, as we term them, the patients recline in their chairs the greater part of the day, at all times of the year, and with proper protection in the way of glass and canvas screens, and with plenty of rugs, can enjoy the roughest weather. In dry weather the chairs are placed under the trees at some distance from the buildings.

As for exercise, walking and hill-climbing are the safest forms. Of games, croquet is excellent, quoits and golf in many cases. When near the water, nothing is better than rowing or paddling. The billiard table is found in most of the sanatoria in a large room with wide-open windows. Cards I found prohibited in most of the German and Austrian sanatoria; this is, I think, from the fact that on the Continent a stake is the rule, and this lends too much excitement to the game. I know of no American sanatorium

where cards are not permitted, but no patient is allowed to play for money.

Diet.—The diet of a sanatorium is essentially abundant, and nourishing, the best of food is used, and used to the best advantage. Each patient is taught that he requires a greater amount of food than the ordinary individual. It is usually explained to him in this way:—The average man requires two portions of food: one devoted to carrying on body functions, the other to replacing the waste caused by physical or mental work. The consumptive requires three portions: one for carrying on the body functions, the second to replace the waste daily going on in the course of the disease, the third to replace that already lost, and to restore him to his former condition of health and bodily vigor.

When this is considered, one quite understands that the sanatoria patient who is eating daily, and properly assimilating, more food than the average working man, is not undergoing a stuffing process, but is simply gratifying the appetite stimulated by a change of scene, and by a life in the open air, and assisting nature in her endeavors to overcome the inroads of the disease upon the body.

With an abundant dietary, of which fresh meats, eggs, milk, cereals and a fair proportion of fats, are an important part, the patient is not restricted to certain dishes, but is allowed to eat almost any food of which he may care to partake.

This, of course, applies to those cases in which there is no pronounced stomach disturbance. In a disease in which there is such a marked tendency to gastric troubles, both at its inception and during its course, no definite rules can be laid down, but every case where indigestion is present must be considered by itself. Keeping the digestive tract in good order taxes the patience of every sanatorium physician, for he knows so much depends upon this.

The intervals between meals vary a great deal at various sanatoria, and depend a great deal upon the habits of the country. In Germany, as a rule, there is a first breakfast at 7 to 7.30 a.m., second breakfast at 9 to 11, dinner at 1 p.m., tea at 4, supper at 7, with milk on retiring at 9 or 10. In the sanatoria of the eastern United States which I have visited there are three principal meals, at 8 a.m., 1 p.m., and 6 p.m., with light lunches at 10.30, 3.30 and 9. I think the rule should be three meals a day for the average patient, modifying this as required. Where the appetite is such that more nourishment is needed, the patient should take the lunches, or, on the other extreme, where the appetite is poor, and the patient is able to eat but little, the nourishment should be taken at shorter intervals.

Of medicinal treatment I need say but little. With the patient under constant supervision early symptoms of an intercur-

rent affection are noted, and serious complications often anticipated. With an hygienic life, fewer medicines are required. The various tuberculins and serums are being used both in America and Europe with the prospects of yet securing a specific for those cases where mixed infection is absent. But in the absence of a specific, symptomatic treatment is resorted to until such times as nature has again the upper hand of the bacillus and its toxins.

Time will not warrant a discussion of the various agents for the relief of cough, night sweats, hemorrhage, chills, diarrheas, anorexia, anemia, and other conditions met in the disease. The methods adopted and drugs used are practically those of the best hospital practice.

Hydrotherapy has not advanced to the same point in America as in Germany and Austria, where most of the larger sanatoria have very complete installations. There is, as a rule, a waiting-room, several dressing-rooms, one room for packs and one for massage, in addition to the douche room itself. In the douche room are tub baths, sitz bath, needle bath and douche table, behind which stands the attendant or physician who gives the douche. On the douche table are stop-cocks and hose, controlling the water supply from the hot and cold water and steam pipes, which terminate here. An outflow pipe regulates the pressure of the water, which is indicated by a gauge. A thermometer is also placed with its bulb in the pipe leading to the hose, showing the temperature of the water flowing upon the patient.

The physician's prescription states accurately what sort of douches are to be used, the order in which the various parts of the body are to be douched, the pressure and temperature of the water, and the duration of the douche.

The cold douche does not, as a rule, last longer than 20 to 25 seconds. It is followed by a good rubbing down or by massage, and then a walk or return to bed, as indicated.

The douches are seldom used for other than incipient or arrested cases. They have not only a tonic effect on the skin, but there is a stimulation of the general system. There results almost an immunity to catarrhal troubles, and a decrease or disappearance of night sweats. "Lateral douches, not too strong, directed toward the seat of an old pleuritic adhesion, often aid considerably in the resorption of the fibrinous bands, and a consequent free chest expansion" (1).

Every patient in a sanatorium is taught to sponge the chest and arms with cold water on rising, rubbing well afterwards. If not strong enough, an attendant does it for him. In cases where there is too much shock, the patient goes through a preparatory course of dry rubbing, friction with alcohol, alcohol and water, and finally cold water alone.

Wet packs are often used for pleuritic or intercostal pains, or

for those indefinite feelings of discomfort in the chest, rarely called pains, which are so frequently complained of.

Wet compresses to the chest prove very useful for combating night sweats.

The constant supervision of the patient is the most important point in which the sanatorium treatment must necessarily differ from that adopted by the general practitioner, and living with the patients, adopting their mode of life, having his meals in common with them, the physician is enabled to individualize the treatment, and though on broad lines, the patients all receive the same treatment, each one has to be studied in detail, and the indications met accordingly. Climate, change of scene and medicines, all have their influence on the course of the disease, but nothing is so essential as this constant oversight. Perhaps in no disease is the patient so disposed to be erratic, or to do thoughtless, injurious acts, and to require constant supervision. Niemeyer, in 1867 (2), after speaking of proper medicinal treatment, abundant diet, rest in febrile cases, the spending of the day in the open air, closes by saying (the italics are his), "*The chief point under all circumstances is that the patients, wherever they may be, live prudently, and be under the care of an intelligent and firm physician.*" The physician studies the patient from every aspect, and his daily life is laid out in detail. There is a fixed hour for rising and dressing, the patient is directed what time is to be spent in walking, and what in resting. He is told what he may eat, and what to avoid. He is instructed in hygienic living. Not only is the patient taught the necessity of care in the disposal of the sputum, and the absence of any danger when this is properly done, but he is taught to observe all the rules of health: the care of teeth, and the proper mastication of food at his meals, to avoid dyspeptic troubles, the regulation of the body functions, proper attention to clothing—especially is this necessary in the case of women, who are taught to dispense with all constricting bands about the waist, to support the clothing from the shoulders, and to do away with long skirts.

In the absence of a specific for this disease, success in treatment depends upon the attention paid to the smallest details of a patient's life, and the scientific application of every agent which can be used to build and strengthen the system, and to this constant supervision, and strict attention to hygiene, is attributable the excellent results obtained in special sanatoria.

1. Knopf—Prophyl. and Treatment of Pul. Tub., 1900, p. 232.

2. Niemeyer—On Pulm. Consumption. Transl., New Sydenham Soc., 1870.

THE OUTDOOR TREATMENT OF SICK PEOPLE.*

BY GEORGE H. CARVETH, M.D.

Physician to Toronto Western Hospital, Toronto Home for Incurables, etc.

Introductory.—Eighteen years ago, when in the office of the late Dr. W. T. Aikins, I was taught to treat sick people by bringing into the bedroom a plentiful supply of fresh air through the open windows, guarding the patients against direct drafts. To-day we go a step further, and place the patient out of doors, thus supplying him with all the fresh air procurable. Why I do this came about in this way: A medical man of Toronto owned a pair of game fowl about equally matched in fighting powers in the autumn of the year. One he kept in a warm, comfortable place during the winter; the other was allowed to do as he liked all the time, and he spent most of the winter in an open shed and in the barnyard, exposed to all changes of the weather. In the spring the open air one whipped the house bird in every contest. This taught me a lesson, and I determined to try the open air plan on my patients. In February and March, 1900, I placed a young woman suffering from chronic inflammation of the knee joint on the open verandah, and in spite of the severe weather she did well. In April I tried the same treatment on a young woman suffering from anemia and general debility; in this case I was encouraged by her grandmother, aged 85, who came daily to visit the patient and approved of the treatment. Under this treatment the young woman did well, but could not sleep in a house for the remainder of the year. The next case was one of operation for appendicitis, which recovered in much less than the usual time after operation. The next was one which the medical attendants thought hopeless, acute Bright's and sepsis; we were all surprised at the brilliant result in this case, and the prejudice against the plan of treatment in severe cases among a group of a dozen medical men who were interested in her case vanished. In the month of May of the same year I became acquainted with a Church of England Minister, who had lived in a tent all winter with good results to his health, and learned from him the management of sick people in tents. Since that time most of my patients have been treated out of doors, with excellent results, and I have watched the results in the practices of a large number of my medical friends, and in every case the treatment is a distinct advance on the house treatment.

Now, what is the treatment? It is placing the patient in the open air all the time, rain or shine, hot or cold, day or night, summer or winter, properly protected against changes in the

* Read at meeting of the Ontario Medical Association, Toronto, June, 1901.



weather, having a trained nurse within call to put on or take off clothing as required for the comfort of the patient. This plan can be carried out in any one of three ways: Firstly, on a lawn underneath the trees (see photo No. 1); secondly, on a verandah on the east or south side of a house (photo No. 2); and thirdly, in a properly constructed and managed tent (photo No. 3).

Cases Suitable for the Treatment.—I have observed cases of the following treated in this way: Debility, bronchitis, rheumatism, accidents, insanity, alcoholism, measles, diphtheria, Bright's disease, severe operations, pneumonia, typhoid fever, tuberculosis, and many others. In fact, all cases we are called upon to treat are suitable for this plan.



Results.—Judging from my experience during the last sixteen months, cases of illness recover in about two-thirds of the time required under the old plan of treatment, and the time of sickness is much pleasanter for the patient and more healthy for the nurse. The more healthy appearance of the patient under the influence of the wind and sun has an encouraging influence on the friends and visitors, and their remarks to the sick one on this point again add hope and encouragement to the patient.

Operation cases of all kinds have less sickness after anesthesia, and the time of recovery is certainly much shorter and pleasanter than under the old house treatment.

Applications of the Treatment.—Besides the use of this plan of treatment in ordinary cases of sickness and operation, as mentioned, it can be made use of (1) when the patient is in a small and crowded house; (2) when an operation is required away from an ordinary operating room, as an emergency case in the country. An operating room suitable for the most serious case can be arranged in a tent in a very short time, and the patient can receive the after treatment here much better than in the ordinary badly-arranged house. (3) When contagious disease breaks out in a boarding school, or other large educational institution, tents being placed on the lawn for the reception of patients and nurses. (4) When treatment of smallpox is required on a large scale, as arranged by the Provincial Board of Health during this year. (5) When treatment of tuberculosis of the lungs on a large scale is made use of, as in New Mexico. (6) And, lastly, when we wish to guard against sickness, as the students of the *ΔΓ* fraternity at Cornell University did last winter by sleeping on the open verandah of their fraternity house, coming out in May the healthiest and brightest group of students at the University, and as a chancellor of a university and many others in Toronto are doing at the present time with great gain to their comfort and health.

THE RELATION OF NASAL OBSTRUCTION TO OBSCURE CASES OF ASTHMA.*

BY ARTHUR W. MAYBERRY, M.D., TORONTO.

IN making a few comments on nasal obstruction, will limit the remarks to such conditions as may affect obscure cases of asthma, and my apology for this brief contribution is that patients suffering from nasal obstruction are frequently coming before the notice of the busy practitioner, who has scant leisure for the study of comprehensive treatises.

The etiology of asthma is complex, and the close association of this disease with nasal trouble is sometimes very remarkable. In the case of nasal polypi, the removal of even small growths, which do not materially interfere with respiration, frequently produce immediate improvement. The best results generally follow intranasal treatment where the probe touching any part of the nasal mucosa produces cough, and not the normal nasal reflex.

Adenoid growths in the pharynx frequently cause asthma, and in recent years much stress has been laid upon the nasal origin of this disease. Voltolini's operations have brought about a clearer

* Read at meeting of the Ontario Medical Association, Toronto, June, 1901.

recognition of this reflex source of asthma, and Bosworth goes so far as to assert that asthma, in a large proportion of cases, is attributed to some form of nasal obstruction or inflammatory condition which, through the agency of the sensory distribution of the fifth nerve, by reflex sympathy, cause bronchial spasm.

I will ask you to recall that along the free borders of the inferior turbinated body and its anterior and posterior ends are situated "swell bodies," which are the erectile tissue of the nose, and which have the power to become engorged or tumefied and to collapse under certain physiologic stimuli. Their chief functions are to humidify and temper the inspired air so that its presence in the lower air-tract will not excite irritation, and to transude serum. Under aggravating conditions, this tumefaction becomes more or less persistent, and tends to provoke mouth breathing. The absence of proper nasal respiration in cases of asthma is a serious factor, demanding careful attention and the removal of the cause. One of the leading indications for operating in nasal obstructions is the aggravation of such a chest affection as asthma. In my experience other inflammatory conditions or forms of nasal obstruction are not so likely to be overlooked, and therefore do not bear closely on obscure cases. It is not my intention to discuss treatment, and will only say that while well defined nasal disease must, of course, be treated on its own merits, it may not be out of place to add a word of warning against operating on the nose with the idea that if it does not cure the neurosis this method can do no harm. Indiscriminate operating, and universal ignoring of nasal complaints are equally erroneous, and the surgeon who is guided by the ordinary principles of surgery and pathology will best serve his patient.

253 Spadina Ave.

A RARE VARIATION IN PHALANGES OF HANDS AND FEET.

BY FREDERICK WINNETT, M.D., M.R.C.S.(ENG.).

THE skiagraphs of hand and foot taken by Chandler & Massey are interesting, in showing the absence of second phalanges in toes and only rudimentary ones in two of the fingers. It is congenital, having been present in mother, grandfather, great-grand-



Skiagraph of hand showing absence of second phalanges of index and little fingers.



Skiagraph of foot showing absence of second phalanges.

father, and great-great-grandfather. Only about half the members of each family are so affected. It is difficult to understand how parts of so great antiquity; and not prone to variation like structures highly and unusually developed, or like vestigial structures, can be so modified. Is it higher evolution, reversion, or merely a sport?

THE OLD SHIP'S MEDICINE CHEST.

TO THE HON. CAPTAIN SAM. BLANDFORD, COMMANDER
SS. *NEPTUNE*.

THE old ship's medicine chest astern has been in every sea,
And has a bottle for each ache, whate'er that ache may be.
The old black chest with brass bound lid, which every pain can thwart,
Has sailed the seas these fifty years and been in every port.

And oh ! if it could tell its yarn of faces red and pale,
Of fever in the Indies and of blood upon the rail ;
Of foreign tongues and foreign skies, of pistol shot and knife ;
Of men now sleeping deep at sea and of their fight for life !

If it could tell its tale, my lads, of voyages long past,
In peace or war, by foreign coasts, in calm or storm o'ercast !
Why man, ere you and I were born it felt the great swell toss
Beyond the coasts of Zanzibar and 'neath the Southern Cross.

These phials with a touch of dust, arranged here row by row,
Have oped where waves the southern palm, where gleams the northern
snow.

Rude mates have mixed these powders ill, and boatswains unexpert,
When some poor devil on the deck lay dying of his hurt.

Oh ! silence of forgotten war, that blazed on sea and shore !
Oh ! darkness of the shining pomps that fell for evermore !
From trampled fields and sunken ships, when perished all the rest,
They brought, with these few bullet holes, the surgeon's medicine chest.

The fleeting customs veer and change ; the spirit is the same
That scorned the lure of gold and rose above the wreath of Fame ;
And down through all the storms of time the art untarnished comes,
While cities fall and cannon rust and cease the battle-drums.

Ah, dauntless art of surgery, and comrades of the craft,
Who sent dead hope upspringing when with jeering eyes you laughed :
Who in the toils of pain have ever played a gentle part,
When light died from the glazing eyes and stopped the broken heart !

We're outbound from the grey old port, and bearing north to-night,
And many days will pass before we hail the harbour light ;
But be content, my skipper men, in fore-castle or hatch,
For we can cure all wounds you get, or anything you catch.

When freezing gales are blowing from the lonely Greenland coast,
And you go blind upon the ice or wander from your post ;
And cannot see the trail of blood across the glaring white,
We've venerable collyria which will restore your sight.

When dog hoods on the heaving pans, or polar bears attack,
And tear the flesh from off your bones or clothes from off your back ;
We've knives and needles, splints and lint, and Friar's Balsam, too,
To put in the repairs and make a happy man of you.

When swarming down the bulwarks, or when boarding, half steam on,
The gaff barbs tear your face and breast ; perhaps a finger gone :
Or, if the lads are shooting, with a rifle ball besides ;
We'll dress your wounds when burned down, and the ship at midnight rides.

Or, if with fever in your berth you toss with parching lip,
There's nothing is too good for you on all the bloody ship ;
And when you're coughing all night long and shiver with the cold,
We'll take our soothing mixtures down to dose you in the hold.

We'll lance you till you howl and swear ; and for the scurvy too,
Or bellyache will give you just the drug we think will do.
The old ship's chest is open aft with all its phials complete,
Beneath the rattling rudder chains upon the cabin seat.

I hear the crashing ice-sheet break before the Atlantic swell,
The gleaming bergs are floating south, outbound from Cape Farewell,
The rocking pans are grinding all night long upon the sea,
And shrieking comes the northern gale amid the rigging free.

Black downward rides the wrack of clouds athwart a sunless sky,
The catching slob grows thicker and the whelping ice is nigh ;
Their black heads at the bobbin' holes rise at the steamer's churn ;
Your work is yonder in the storm—your homes are far astern.

So all hands out upon the ice with rifle, gaff and knife,
And keep in the ice-master's sight on peril of your life ;
If from the rocking floe you fall, swim back to ice again,
Black with the blood of bedlamers at early morning slain.

The harps are panned : the hoods rise up behind the roaring keel,
The scunners hoarsely shouting to the men upon the wheel ;
Our number's thirty thousand and a hundred every man—
Oh ! don't you hear them yelling ? out, all hands, upon the pan !

Heave out the coal into the sea, and off the hatches drag ;
And so all day among the pans, asteering flag to flag.
And all night, Master Watches, while a thousand torches flare
In twinkling lines across the ice, as point to point you bear.

And now our flags are hoisted from every yard complete,
And we are back to port again—the devil take the fleet !
I've half a mind to tell you, boys of Bonavista Bay,
What you will tell the girl ashore—I know what you will say.

But ere we steam by Bacalieu, one other toast must come ;
Drink it, my skipper men, for me, in red Jamaica rum :
Drink my toast here upon the sea—drink it on shore at rest—
See it behind my shoulder, lads, the Old Ship's Medicine Chest !

—EZRA HURLBURT STAFFORD, M.D., C.M.,
Surgeon SS. *Neptune*, Saint Johns Fleet.

Pharmacology and Therapeutics.

IN CHARGE OF
A. J. HARRINGTON, M.D., M.R.C.S.(Eng.)

SLEEPLESSNESS IN HEART DISEASE AND ITS TREATMENT.

GIBBES states, in the *Chemical Journal* of January 16, 1901, that in all cases of heart disease our first treatment should be directed to relieving, if possible, the most urgent symptoms. Sleeplessness, if it is present to any great extent, must always be a serious symptom, and is bound to make itself felt in all cases, being in some a matter of vital importance.

We have therefore to decide when hypnotics are required, and what character of drug should be given. The ill effect produced from the persistent and unregulated use of sleeping draughts by the general public cannot be too strongly condemned, and it enforces upon us the necessity of using the greatest caution in prescribing them. They should be used either to break the habit of sleeplessness, which the system may have acquired, or to give rest when it is urgently needed. In the former instance, the influence should be kept up for three or four nights, or a speedy relapse will follow. In many cases we obtain far better results by giving three or four smaller doses during the day than from a larger amount given in one dose at night; this specially applies to opium, chlortone, and bromide. Our choice of drugs must always depend on the character of the case and the complications that are present. To describe the various hypnotics that have been recommended would be waste of time; therefore, only those drugs are given which the author has used and found most successful.

Opium and morphine are among our most reliable sleep-producers, and when pain is present are invaluable; they can be safely given in any uncomplicated form of heart disease, and the presence of lung and kidney complication is by no means such a rigid bar to their administration as some would lead us to suppose. Greater care is, of course, required under these circumstances, and their effects must be carefully watched; but they have frequently been used by Dr. Gibbes with the greatest benefit when the lungs have been clogged, and a large quantity of albumen present.

after having failed to obtain sleep by any other means. If pain is very severe, and immediate results are required, morphine should be given hypodermically, care being taken in extreme cases to minimize the shock of inserting the needle as much as possible. While opium and morphine can always be relied on to relieve pain, they do not necessarily act as hypnotics, unless the dose is larger than we may wish to give, for the writer frequently finds their action delayed, the patient not getting to sleep for hours and sleeping better the second night than the first. Sometimes he can obtain a much better hypnotic result by giving a quarter or half grain dose of opium three or four times during the day than two or three grains at night; in other cases one-sixth of a grain of opium every hour for five or six doses during the latter part of the day will produce a more satisfactory result.

Chloral hydrate should only be given when the arterial tension is high, and its depressant action on the heart is beneficial, as is sometimes the case in acute alcoholism. He has not, however, derived any special advantages from its use in other conditions to compensate for its depressing effects.

Chloralhydrate acts in the same manner as chloral, but has the advantage of being less of a depressant. It has been strongly recommended, but Gibbes has not found its action as speedy as some other hypnotics.

Trional is very useful, and acts speedily. It has no special action on the circulation or respiration, and can consequently be given in any form of heart disease, but he has not found it satisfactory when pain is present. Sulphonal acts in the same manner as trional, but as a hypnotic its delayed action is much against it. The combination of the two in 10 or 15 grain doses each has a more satisfactory effect than if they are given separately. If much prostration is present, as is sometimes seen after influenza, it is advisable to avoid their use.

Paraldehyde is a very useful hypnotic. It has no effect on the circulation or respiration, and can be given in any form of heart disease. As, however, it has a slight irritant effect on the gastric mucous membrane, it is not always advisable to administer it when the cardiac sleeplessness is complicated by dyspeptic troubles.

Chloretone is one of the most recent additions to our list of hypnotics, and is very useful in heart disease. It has no depressant action on the circulation, can safely be given when kidney or lung complications are present, and is quick in its action; its special usefulness, however, in heart disease is due to the fact that it is not only a perfectly safe hypnotic, but a powerful germicide and anesthetic as well, relieving the dyspeptic symptoms so commonly present by anesthetizing the coats of the stomach and

arresting fermentation. It is a perfectly safe hypnotic, a case having been recorded in which 120 grains were given in 24 hours without serious result. As a hypnotic, Dr. Gibbes generally gives 15 grains at bedtime, and repeats in two hours if required; when there is much excitation of the nervous system, 1 1-2 or 2 grains three times a day, with a 15 grain dose at night has an even more than beneficial effect, and produces sleep the second night without any further dose being given. The bromide salts are chiefly indicated where the neurotic element predominates, and if given three or four times a day will often relieve sleeplessness, but the writer has frequently found them fail when any one of them is given as a pure hypnotic in one dose at night.

Alcohol will in many instances promote sleep before heart failure has far advanced, and where restlessness is great; it should, however, only be given in small doses just as the patient is settling down to sleep. If the arterial tension is high, it is worse than useless, as it may increase the sleeplessness. In the later stages it may have a soothing, but not a hypnotic, effect (*Therapeutic Gazette*, May 15th, 1901).

In prescribing morphia and opium in cases of heart disease complicated by the presence of albumen in the urine, I have noticed in several patients that the administration of morphia or opium by the mouth has set up alarming symptoms. One patient, I remember, went into a convulsive state by giving 1-4 grain morphia sulph. in tablet by the mouth, and another into a comatose condition from 15 drops of liq. opii sedative; to both of these patients I have given 1-4 grain morphia sulphate hypodermically since. I now always use this drug hypodermically in these cases with no untoward effects. Chloral hydrate is best dispensed with syrup of licorice. As it sometimes has an irritant effect on the gastric mucosa, it is contraindicated in neurotic cases except in small doses combined with bromides.

Trional and sulphonal should be dispensed in konseals, in 20 to 30 grain doses, followed by hot drink. Paraldehyde dose, 30 to 60 minims soluble 1-10 water, best prescribed with glycerine or syrup of orange. Chloretone best prescribed in konseals, 20 grains, or in pills, 3 grains, very reliable. Like chloral, trional and paraldehyde are of little use if there is much pain. Bromides are best prescribed in 30-grain doses, combined with syrup of orange or fluid extract of glycyrrhiza and syrup. A. J. H.

DIAGNOSED.—Della—Orlando Smiggs was out to see me last night, and he was, oh, so nervous, and showed so plainly that he had something on his mind that I was sure he was going to propose, but he couldn't muster up the courage. Ophelia—Yes, Orlando is subject to those sudden attacks of cholera morbus.

Selected Articles.

FIRST AID TO THE PROSTRATED.

THE great heat so prevalent every summer has given rise to many questions regarding the causes leading to heat exhaustion, sunstroke, and the prevention and treatment of such cases. Below will be found a resume of the opinions as to how this condition should be treated.

When overcome by heat exhaustion, the conditions are as follows:

Mind usually clear and in a normal condition.

Pulse feeble and rapid.

Skin cold to the touch and covered with perspiration.

Always a decrease in bodily temperature; often this decrease is very great, in many cases the temperature falling to 97 degrees.

The voice is weak, and there is a general muscular relaxation and sense of weakness.

The above conditions are apparent to a more or less degree in every case of heat exhaustion.

SYMPTOMS OF SUNSTROKE.

In cases of sunstroke or thermic fever the conditions are much different. There is generally total insensibility.

Pulse is usually rapid, and at first strong and full, but in many cases becomes weak and irregular.

The skin of the patient is dry and burning to the touch.

The face is flushed, and often becomes cyanosed.

Temperature very high, varying from 103 to 106 degrees.

The breathing of the patient is always affected, it may be rapid or it may be deep, irregular and labored, with generally a rattling, due to a collection of mucus in the throat.

The pupils of the eyes are generally tightly contracted.

THE EFFECTS OF HUMIDITY.

The effects of humidity are more readily felt in a dry than a moist atmosphere, as the body cools itself much more readily in a dry than in a moist atmosphere. Therefore, persons much more easily withstand high temperatures in a dry atmosphere than in a lower temperature. It is for this reason that sunstroke is much less frequent in dry atmospheres than in the moist atmosphere of India or our own city. This fact also explains the reason why

persons employed in laundries, sugar refineries, kitchens, etc., are much more prone to be attacked by thermic fever than those who are actually exposed to the direct rays of the sun.

The general distinction between sunstroke and heat exhaustion is not generally understood. Many persons imagine that sunstroke is an advanced stage of heat exhaustion. The cases are entirely different. At the base of the brain there are two so-called centres, which are really automatic devices for controlling the production and elimination of bodily heat.

One of these centres, known as the inhibitory heat centre, controls the amount of heat produced, acting as a check upon overproduction. The other centre has to do with the production and dissipation of the heat, or, in other words, sees to it that the ratio between the amount of heat produced and the amount of heat thrown off is kept equal.

EFFECTS OF HOT ATMOSPHERE.

If a man be placed in surroundings which have been shown to be favorable to sunstroke, viz., a moist, hot atmosphere, the production of bodily heat will go on as usual, but the moisture in the atmosphere prevents its rapid elimination thereof, thereby causing an excess of bodily temperature or a mild grade of thermic fever.

After this has continued for a time, the inhibitory centre becomes exhausted or paralyzed, thus losing control over heat production, and at once an excess of bodily heat is generated in all the tissues of the body. Joining in this overproduction, the bodily temperature rapidly increases, and the victim falls, overcome by the heat. This is the generally accepted theory, and if it be correct heat exhaustion is easily explained.

In heat exhaustion, instead of the heat-producing centre being affected, the centre governing heat elimination is paralyzed, the bodily heat is dissipated more rapidly than it can be produced, and exhaustion follows.

The treatment of cases of heat exhaustion in the various city hospitals is practically the same, consisting in stimulation of the circulation and the production of heat. The first is best brought about by the administration of cardiac stimulants, hypodermically, such as digitalis, strychnia, ammonia, and atropine.

USE OF THE HOT BATH.

The demand for an increase in the bodily temperature is met by the application of hot water bottles, or even the use of the hot bath in exceptional cases.

In the treatment of thermic fever cases the greatest indication is to reduce the temperature of the patient, and this is best done by removing the clothing and putting him into a cold bath, the temperature of which is rapidly lowered by the addition of ice.

In severe cases the patient is rubbed with ice while in the bath, the patient is kept in a cool place, with ice bags applied to his

head. The latter treatment is resorted to if there be much indication of distress in the head.

The after treatment is very simple, the patient generally being allowed to leave the hospital in a few days, with the caution to remain away from manual labor, and to keep out of the sun for several days.

Formerly the treatment for sunstroke cases was bleeding, but this never proved very satisfactory, and is now rarely done.—*Selected.*

MEDICINE AS A PROFESSION.

DISCUSSING the prospects of a newly-fledged practitioner of medicine, the *British Medical Journal*, which recently was wholly given up in one issue to the subject of medical education, says:

“Supposing our student to have become fully qualified and registered, he is next confronted with the question, What is he to do to obtain a livelihood? There are, of course, the medical services of the army and navy open by competitive examinations; or, if he has filled the offices of house-physician and house-surgeon at his hospital with credit and distinction, and has some facility for acquiring languages, he may be advised to compete for the Indian Medical Service. . . . Other openings which frequently occur and are advertised in the medical journals are those of assistant medical officers at lunatic asylums, or in the smaller general and special hospitals in London or the provinces, and assistant medical superintendents at the metropolitan infirmaries or fever hospitals; but these, though well enough for a year or two, ought not to be held too long, or the holder is liable to become unfitted for ordinary practice. One form of temptation which the newly-qualified man cannot be too strongly cautioned against is that of the co-operative friendly societies, who seek to engage his whole services at a certain fixed salary, they providing him with drugs and a dispenser, and also with a residence or allowance in lieu of one.

“The General Medical Council has expressed disapproval of medical men taking office under these societies, and the profession, as a rule, fights shy of them, so that the holders find themselves looked upon as black sheep, and cut off from professional society; some of the branches of the British Medical Association have decided not to admit the holders of such appointments to the membership of the branch.

“The newly qualified man who secures an assistantship with a successful practitioner in the suburbs of London or in the country, may expect to receive from £100 to £150 a year indoors, with a prospect of rising, if he is found to contribute to the success of the practice, to perhaps £200 or £250. He will also usually have

a percentage on the midwifery cases which he attends. At the present time, in consequence of the condemnation by the General Medical Council of the employment of unqualified assistants for any duties except such as dispensing, there is said by medical agents to be an abnormally large demand for qualified assistants and an abnormally small supply of them, showing itself, particularly at this season of the year, in a dearth of locum tenentes to supply the place of principals going away on holidays; but the laws of supply and demand will doubtless set this all right within a year or two. . . . Should the practice be a country one in England or Wales, he will find that it is principally made up of three elements, in varying proportion: (1) Private practice, which is, of course, as a rule, the part which pays best; (2) Poor law appointments, generally including that of public vaccinator, which, since the antiseptic method of performing this little operation has been made obligatory and vaccinating stations have been done away with, are better paid for than they used to be; and (3) clubs and friendly societies, which are taken more as an introduction to other practice than for the sake of the remuneration given, which, ranging from 2s. 6d. to 4s. a head per annum, is far too small—certainly the lower figure is—to pay for the actual work done. If the Conciliation Board, proposed by the General Medical Council, is able to bring about, as we have been led to hope, a rise in these contract prices to at least 4s. a year, it will have done a very considerable service, both to our profession, and to the friendly societies.

"It will be seen that from the moment when the student becomes a registered medical practitioner his services have a definite money value, which ought, in the course of years, to give him a fair interest on the capital expended on his education, and, if he be at all successful, by degrees the return of the capital itself. Should he be so fortunately situated as not to have expended the greater part of his capital already, the choice lies before him of either setting up in practice for himself or purchasing a practice or partnership, for which, however, much judgment is required. His safest plan is to consult some well-known medical agent, and under his advice to purchase a partnership after a year's preliminary assistantship."

QUAINT REMEDIES AND IDEAS.

At the last meeting of the New York Historical Society Dr. Sydney H. Carney, jr., read a paper on "The New York Medical Profession in 1800." The better to put his hearers into the proper mental attitude for what he had to say to them, Dr. Carney reminded them that at the time of which he was speaking, peach,

plum, and pear trees flourished in Madison Square, and Babylonian maples and sycamore trees waved their branches as they had done for generations in City Hall Park.

There has been some speculation among the curious as to the prevalence of gripes at bedtime among New Yorkers of a hundred years ago. The remedy for this complaint prescribed by the physicians was nutmeg and brandy, and the yolk of an egg to be taken before going to bed. For apoplexy, salt and cold water were to be used, whereupon the patient was "immediately to come to himself." A toothache remedy efficacious always with one exception in the practice of one physician was to crush a lady-bug between the thumb and forefinger and then to rub the finger on the gum and tooth. Freshly crushed bugs were recommended. For the bite of a mad dog the prescription was an ounce of the jawbone of the dog, some colt's tongue, and a scruple of verdigris, that taken from the coppers of George I. and George II. being preferred, of which compound a teaspoonful a day was to be taken. If that failed to cure, 180 grains of verdigris and half an ounce of calomel were to be given in one dose by a physician in person. If this still failed, four grains of pure opium were given to the patient. This last was a secret remedy so successful that early in the century the State Legislature bought the secret for \$1,000.

For a visit the fee charged was \$1, for a visit and a dose, \$1.25. Pills were 12 cents. Doctors got \$1 a mile for going out of town. It cost \$3 to get one to Brooklyn, and \$10 to have one visit Staten Island. For bleeding, a charge of from \$1 to \$5 was made.

Tadpoles figured in the regimen of that day to such an extent that it is said the people of Vermont, in a season of scarcity, almost fattened on them. And one of New York's famous physicians spent a part of his time in the study of the alimentary qualities of these tid-bits.

WOODEN PROTEST.—"Ah," quoth an Edinburgh gentleman to a manufacturer of artificial limbs, as he was being shown over the latter's busy factory the other day, "these pieces of timber"—pointing to a lot of wooden legs—"are but so many eloquent protests against the horrors of war." "Exactly," answered the manufacturer, "stump speeches."

A DOCTOR once presented himself at the Golden Gates for admission, and after passing a fair examination as to his conduct, Saint Peter agreed to permanently admit him if he could pick out Adam and Eve from the assembled angels. The doctor looked around and soon found his progenitors. But Peter was puzzled, and asked the doctor how in the name of the golden harps had he managed to recognize the first couple. "Oh!" said the doctor, "that is quite easy; they are the only ones without an umbilicus."—*Indian Lancet.*

Proceedings of Societies.

MARITIME MEDICAL ASSOCIATION.

ELEVENTH ANNUAL MEETING, HELD AT HALIFAX, JULY 3RD AND 4TH, 1901.*

THE eleventh annual meeting of the Maritime Medical Association was held at Halifax, Nova Scotia, on July 3rd and 4th, 1901. The President, Dr. W. S. Muir, of Truro, N.S., occupied the chair.

We in Ontario are in the habit of considering the meeting of the Ontario Medical Association a success numerically when we have an attendance of 200 members, *i.e.*, an attendance representing 8 per cent. of the practitioners of the province, there being 2,500 on the Ontario Register. In the Maritime Provinces, however, there are in all about 800 practitioners, and at the recent meeting in Halifax no less than 106 members of the Association were in attendance, representing 13 per cent. of the practitioners in that district.

From that standpoint, therefore, the meeting of the Maritime medical men was a decided success, but in other respects also the visitor was most favorably impressed. The work of the meeting was dispatched in a prompt and business-like manner. The papers were of a high standard, and the animated and interesting discussions were calculated to sustain an unusual interest in the proceedings from the beginning to the end. Marked evidence of this fact was observable in that the reader of the last paper of the meeting had as good a hearing as any other on the programme. The Address in Medicine was read by Dr. H. A. Lafleur, of Montreal, and the Address in Surgery by Dr. A. Primrose, of Toronto.

There is no man better known to the profession of Canada than Dr. Muir, of Truro, the President of the Association. Those of us who have attended the meetings of the Canadian Medical Association have seldom failed to find him there. His executive ability is well known. He has served on the Committee on Dominion Registration, of which he is a warm advocate, at every meeting of the Association since Dr. Roddick first proposed that measure. Dr. Muir was one of three to start the Maritime Medical Association twelve years ago in St. John, Dr. J. W. Daniel

* For this report we are indebted to Dr. A. Primrose, Toronto.

and Dr. George E. Hetherington being the other two. Dr. Daniel occupied the chair, and the necessary resolutions were moved and seconded by Drs. Muir and Hetherington. From this beginning the Association has grown to its present remarkable strength. In addition to his connection with the Maritime Medical Association, Dr. Muir has been Secretary-Treasurer of the Nova Scotia Medical Association for the past fifteen years. This Association is thriving also, as evidenced by the fact that the attendance at Amherst last year (the 32nd annual meeting) was 65. The members of the Maritime Medical Association made a very graceful presentation to Dr. Muir at the banquet; they presented him with a very handsome tantalus in cut glass and mahogany, with silver mountings, also some very chaste china ornaments for Mrs. Muir. This presentation was made in recognition of the great services Dr. Muir has rendered to the medical profession in the Maritime Provinces.

The social side of the recent meeting at Halifax was also a complete success. Halifax presents attractions seldom equalled for such a gathering. Its beautiful park and public gardens, with the magnificent harbor, are universally admired, whilst the general hospitality of the people insures thorough enjoyment to the fortunate sojourner. The Reception Committee, under the energetic chairmanship of Dr. G. Carleton Jones, had looked well after the social side of the programme, the items of which included a garden party given by the Lieutenant-Governor at his beautiful residence on the North West Arm, and a banquet at the Hotel Florence on Bedford Basin on the last evening of the meeting. The banquet was preceded by a sail upon the harbor.

A resolution was adopted at the meeting urging the formation of a Medical Defence Union, a copy of the resolution being sent to the Canadian Medical Association, where it is understood the subject is to be dealt with during the Winnipeg meeting this month.

The medical profession of the Maritime Provinces are to be congratulated on the existence among them of an Association of such real worth. One cannot close this short reference to the meeting without a remark on the untiring efforts of Dr. G. M. Campbell, of Halifax, the efficient Honorary Secretary, to whose untiring labors the success of the meetings is largely due.

THE following gem is taken from the *Cleveland Medical Gazette*: "Mamma, what's twins?" asked the smallest child. "I know," replied the older one, before the mother could answer. "Twins is two babies just the same age. Three babies are trip-lets, four are quadrupeds, and five are centipedes."

The Canadian Journal of Medicine and Surgery

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Doctors will confer a favor by sending news, reports and papers of interest from any section of the country. Individual experience and theories are also solicited. Contributors must kindly remember that all papers, reports, correspondence, etc., must be in our hands by the fifteenth of the month previous to publication.

Advertisements, to insure insertion in the issue of any month, should be sent not later than the tenth of the preceding month.

VOL. X.

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NO. 3.

Editorials.

LIQUID ALIMENTS IN DISEASE.

WE are indebted to the editor of *Le Progrès Medical* for a review of Professor Cornet's recent work on the alimentation of patients, and propose to reproduce in this article some of the author's views on the use of liquids in the diet of the sick. Incidentally, it may be remarked, that carefully written books on dietetics have never been, and are not at present, common in medical literature, although

in the treatment of some cases, diet is the more important therapeutic agent and frequently the only really active one required.

Liquids, especially water, are indispensable, especially in fever cases, and sometimes water is the only aliment which can be tolerated. Water is used in a great variety of forms; spring water, filtered water, toast water, infused water (as in tea or coffee), boiled water, or water mixed with honey, lemon, cognac, albumen, mineral water or gaseous waters. Professor Cornet examines all these different forms and indicates their advantages and defects. He mentions the temperature, which water should have at the time it is drunk (more than 9° F. and less than 68° F.). He shows the inconveniences of iced drinks, which spoil the teeth, irritate the stomach, retard and disorder digestion, lower the temperature of the blood, but which have, however, a useful therapeutic effect in nausea and vomiting. He recommends hot infusions (hop and linden), which when drawn have a temperature of about 131° F., so that when they reach the stomach they may have a temperature of about 108° F. Hot drinks increase caloric, excite the motility of the vessels and nerves, and facilitate the chemical reactions of digestion. However, they should not be used to excess, or an individual may end by producing gastric dilatation. In general, people drink too much, but, on the other hand, they should avoid the other excess, a dry diet, which, if used without discernment, may be very hurtful. One should drink, preferably at the end of a meal and in little sips. Exceptionally, in case an individual suffers from thirst, or wishes to relieve pain or excessive acidity of the stomach, he may drink between meals, or a quarter of an hour before meals, in order to attenuate the too powerful action of a hypersecreted gastric juice. In digestive disorders certain liquids should not be permitted; they are wines, beers, cider, perry, artificial aerated waters, liqueurs called aperitive and liqueurs called digestive, although in some cases the physician can make exceptions to this general exclusive law. Coffee, stimulating and diuretic, is useful to the obese, to depressed, nervous people, to hypopeptics, to those with dilated stomachs and to the constipated; its excessive use may cause trembling, palpitation, oppression, neurasthenia, lowering of blood pressure and venous plethora of the abdomen. It is unsuitable for children, the hysterical, the epileptic, for nervous, excitable people and for those who have certain forms of heart disease. It should not be taken in its purity when one is fasting. It should not be given to dyspeptics who have pain or tenderness in the stomach (ulcer,

gastritis, hyperacidity). We may add to coffee, cream, milk, sugar, milk sugar in constipated cases, or eggs. We should not add to it chicory, which is indigestible, nor alcoholic liquors, which cause agreeable but momentary and deceptive sensations.

Professor Cornet considers that tea is inferior to coffee as a drink at the end of a meal, but it may be useful as a stimulant and a hot drink. Drunk between meals, as at five o'clock teas, he thinks that tea is hurtful. For dyspeptics cocoa is not very digestible and chocolate still less so. The digestibility of these aliments is in an inverse ratio to their nutritive value. Meat bouillons and saline solutions exercise a stimulating action, which, according to the case, may be sought for or avoided in dyspeptics. Bouillons often serve as vehicles for yolks of eggs, raw meat, meat powders, artificial albumoses, peptones, etc. One may take them at any moment and at any temperature. Taken before meals bouillon answers as a real aperient.

Professor Cornet recommends milk in diseases of the liver, general hyperpepsia, acute gastritis, chronic gastritis, ulcer of the stomach, and in ulceration of the stomach, duodenum and intestines, in certain diarrheas, dysentery, slight hyperchlorhydria without dilatation. It may be injurious as a liquid in dilatation of the stomach and in atony of the stomach. It is not suitable in hypopepsia and in secreto-motor insufficiency. It should be used with reserve in acute diarrhea, cancer of the stomach, nausea, certain forms of gastritis when there is much flatulence, in intestinal tuberculosis, amyloid degeneration and in constipation. A patient confined to an exclusive milk diet should drink milk at a temperature between 60° and 91° F., in little sips and at regular intervals varying according to the patient. Milk may be diluted with boiled water, mineral water, lime water to make it more digestible, and preferably with the gaseous solution of glycerophosphate of lime or with sugar or cream. In certain cases these last mentioned bodies, if added to milk, may produce acid fermentation and re-awaken pain. When there is distaste for milk one may add to it seltzer water, peppermint water or some table salt. Ordinarily, brandy, rum or whiskey should not be added to milk, and some peptones cause it to coagulate immediately. Condensed milk, milk powder, milk albumen and lactated farina may be useful in certain cases. The therapeutic value of whey is still to be decided, but its alimentary value is very small. Kephir and koumiss are fermented milk, useful in hypopepsia, aepsia,

secreto-motor atony, chronic enteritis, constipation and cancer but they are contra-indicated in hyperpepsia, hyperacidity, ulcer of the stomach and in cardiac cases.

It is needless to state that Professor Cornet's opinion will go far to settle disputed points in the dietetic practice of physicians. By clinical methods one finds out, after a number of years, that, in recommending this or that liquid aliment, generalisation is unsatisfactory. A great prejudice exists in many minds against coffee, and it is quite likely that much of this may be due to the indigestible character of chicory, which in this country is almost universally combined with coffee. The right or wrong prescription of milk in a case of disease of the stomach or intestines may make or mar a medical reputation, so that one must be careful to avoid generalisation in prescribing this favorite liquid for dyspeptics. It is pleasing to see that Professor Cornet does not pin his faith to wine, and it may be that during this twentieth century, owing to his excellent advice, Frenchmen may eat more nutritive food and drink less sour wine.

J. J. C.

IS A DRUGGIST JUSTIFIED IN DIVERTING A SALE OF A PROPRIETARY MEDICINE?

THIS interesting question was discussed in a paper read before the Kentucky Pharmaceutical Association by Mr. C. S. Porter, the paper being published in the July number of the *Western Druggist*, Chicago. The essayist explained at the outset his view of the difference between diversion and substitution. The former he approved of, the latter he condemned. He said: "I claim that a prescription should be filled as written (if correct), even to brand, if possible. . . . But this does not bar me from calling on my friend, the physician, explaining to him that I am prepared to compound these remedial agents into any form or combination that he may desire, that it is to his interest as well as the patient's to have me do so. Nor does this prevent me from making similar combinations, or using the formulas of the National Formulary to meet his needs along these lines. For example, I am justified in diverting his prescription for the compound syrup of hypophosphites from any well-known make or from any of these brands to another, the sale of which is more profitable to me, provided I do not sacrifice quality."

In other words, Mr. Porter claims the right of diverting the

dispensing of one manufacturer's product (quoted in the prescription) to that of another, if it be equally good. Assuming that the products of rival drug houses are of equal quality, there would be no harm in doing as Mr. Porter says, if the prescriber's consent is obtained. A dispensing pharmacist should know the qualities and strength of the different preparations which he handles in the course of his work, and if, to give an example, he should be short of S—'s fluid extract of cascara (quoted in a prescription), there would be no harm in diverting the prescription so that P—'s brand of that preparation is used instead. It certainly does seem unnecessary that a pharmacist should be obliged to keep in stock a large number of duplicate samples of the same drug which have been manufactured by different houses. Under this head, in compounding a prescription, all that can be reasonably asked of a pharmacist by prescriber and patient is that preparations of proved strength and efficacy shall be employed in fabricating the order.

On the other hand, the prescriber may have good and sufficient reasons for preferring certain products of one factory to similar products of another factory, and, in the last resort, he has the right to dictate that, in putting up any of his prescriptions in which a certain brand is mentioned, the dispenser shall not have the privilege of diverting to another brand, even though it be thought to be of "equal quality." Chemical composition and the assay of a drug is one thing, its physiological or clinical behavior is another. A physician who attends closely to the details of his practice, inquiring into the actions of the medicines he prescribes, will observe differences in the actions of similar drugs, prepared by different houses, and he should have the right of choice. Should he not feel any interest in the quality of the preparations he orders, and be satisfied if his prescription reads well, the dispenser is quite justified in looking after his own business interests and in endeavoring to promote the sale of such preparations as he has in stock, instead of going to the expense of buying a fresh preparation, which may not be purer or stronger than those he has already on his shelves.

We do not agree with Mr. Porter's statement that, "if the pharmacists return to the simpler forms of the pharmacopeia, our physicians will again become thinkers and will fit their remedies to their cases and not their cases to their remedies, while pharmacists will cease to be mere peddlers of other people's goods," because the dispensing pharmacist is credited with more than his

share of influence in seducing the doctor from the path of pharmaceutical rectitude. We think that the drug-manufacturing houses of America have had more influence in this direction. The latter deserve unstinted credit for their successful efforts in obtaining rare foreign drugs, for preparing them carefully, and for marketing them in attractive forms. They employ, at great expense, skilful workmen, trained chemists and experienced physiologists. All this we cheerfully acknowledge. But it would be more conducive to the exercise of brain tissue by the physician, more profitable to the dispensing chemist, and more reputable for the manufacturing chemists if the latter would cease turning out ready-made prescriptions. The discovery and trial of new vegetable, animal or chemical substances, together with the manufacture of all regular pharmaceutical products, should be the limit of their ambition. Inasmuch as manufacturing chemists have shown themselves capable of noble enterprises, they should not block the way of pharmaceutical reform. Reforms mature slowly, but in the end the right thing is done. Let us hope that with the added momentum of the twentieth century, physician, dispensing chemist and manufacturer may quickly discover the grosser errors in their behavior towards one another, and that each may assist the other in securing the triumph of the best. J. J. C.

THE ETIOLOGY OF NOMA.

NOMA, or cancrum oris, is a term used to designate a progressive mortification of the cheeks. It appears at the decline of infectious diseases, especially measles; it may also follow scarlet fever, typhoid, small-pox, or pertussis. It attacks girls more frequently than boys, usually between the ages of two and five years. It is said to be endemic in low, moist countries, as Holland, though apparently it is not contagious.

As one might expect, this special form of gangrene is most frequently observed in children who are sickly and ill-nourished, and who show feeble resistance of the tissues. When the body is vigorous, the reaction provoked by a microbic attack is revealed by suppuration; when the organism is weakened and incapable of sufficient reaction, gangrene develops.

"Freyrnuth holds that noma is an infectious process, without, however, a specific organism in all cases. Guissetti found pseudo-

diphtheritic bacilli together with staphylococci and streptococci. Foote thinks that noma is due to a double infection." (Anders, A.D. 1900.)

"Babes and Bambilovici think they have succeeded in isolating the special microbe of this disease, which they describe as a long, very slender bacterium. When injected under the skin of a rabbit it develops gangrene at the seat of inoculation. This observation was confirmed by Guissetti in 1896" ("Les Processus Généraux par MM. Chantemesse et Podwyssotsky, A.D. 1901"). Walsh (Proceedings Phil. Pathological Society, 1901, IV., 179-186) concludes that true diphtheria bacilli are found in many cases of noma, and that, as noma is a form of gangrene, the diphtheria bacillus may be the primary cause, at least in some cases, of the putrefactive softening resulting from the growth of saprophytic germs.

As the editor of the *Journal of the American Medical Association* wisely says, in his editorial, July 13th, 1901: "A larger number of cases (Walsh reports eight) must be studied before the unity or multiplicity of the etiologic factor in noma may be definitely settled." Besides, from the fact that diphtheria antitoxin was successfully used in the treatment of two cases of noma by Freymuth and Petruschky in 1898, it would not follow that noma was caused in these cases by the diphtheria microbe. Anti-diphtheritic serum was used by Dr. Talamon, of the Bichat Hospital, Paris (*La Presse Médicale*, February 22nd, 1901), in the treatment of pneumonia. He treated fifty cases of pneumonia, with seven deaths, i.e., a mortality of 14 per cent., and of these forty-two were undoubtedly alcoholics. No effort, however, was made to show that these cases of pneumonia were etiologically due to the Klebs-Löffler bacillus.

One practical conclusion, however, to draw from considerations about the etiology of noma would be that in treating measles and other acute diseases of childhood, oral antiseptics should be carefully supervised.

J. J. C.

EDITORIAL NOTES.

How is the Contagion of Tuberculosis Conveyed?—As some of our readers may remember, the Committee on Epidemics of the Provincial Board of Health of Ontario issued, June 19th, 1900, a circular containing, among other instructions, a copy as follows of the resolutions dealing with the problem of limiting the spread

of tuberculosis, and especially of that more prevalent and contagious form of it known as consumption :

Moved by Dr. Cassidy, seconded by Dr. Bryce :

1st. That as tuberculosis is a contagious and infectious disease, all inmates of provincial institutions who are affected with this disease should be isolated in wards set apart for such patients, and not be permitted to associate generally with other inmates.

2nd. That when rooms or wards which have been occupied by consumptive patients become vacant, they should be disinfected according to the methods set forth by the Provincial Board of Health in the pamphlet issued by it containing rules for checking the spread of contagious disease.

3rd. That an individual affected with tuberculosis and living in a private family should be isolated as much as possible from other members of the household, especial care being taken in the destruction of his expectorations.

4th. That when the room occupied by such a patient becomes vacant, it should be thoroughly disinfected, and, as a matter of prevention, the whole dwelling should be disinfected according to the instructions in the pamphlet regarding disinfection issued by the Provincial Board of Health, and that such other precautions be taken as are provided in Section 101 of the Public Health Act (1897).

5th. That the Local Boards of Health be urged to establish rules for the notification of cases of tuberculosis to the Medical Health Officer or to the secretary of the local Board of the municipality.

As the conviction grows in the minds of the Canadian people that the opinions expressed in these resolutions are well grounded, definite action will be taken to carry them into effect.

Foreign Body in a Case of Appendicitis.—At a meeting of the Anatomical Society of Paris, July 5th, Dr. Weinberg presented, in the name of Dr. Marien (Montreal), an appendix removed from a young man who had been operated on after a third attack of appendicitis. The free extremity of this appendix was very much dilated. The operating surgeon had found a tack of about the third of an inch in length embedded in mucus. Dr. Weinberg stated that the specimen revealed chronic atrophic lesions; its upper part exhibited signs of chronic inflammation, but no well-marked acute lesions. Helminths have been mentioned recently as a cause of appendicitis, and santonin has been successfully used as a remedy. Helminths would not seem, however, to be a common cause, for women, though less subject than men to appendicitis, are just as likely as they are to have helminths in the intestines. Senn thinks that the influence of foreign bodies in producing appendicitis has been greatly overestimated. He found

foreign bodies in only two cases out of a total of more than three hundred operations for appendicitis. He says "fecal concretions are found in from 15 to 20 per cent. of all cases subjected to operative treatment. Fecal concretions are concerned in two distinct ways in the etiology of appendicitis: (1) Their presence causes a mechanical irritation and lesions of the mucous membrane, which serve as an infection atrium for the entrance into the tissues of pathogenic microbes. (2) In case the appendix becomes swollen from mechanical or inflammatory causes, pressure necrosis directly over or around them may ensue, as is so often seen in perforative and gangrenous appendicitis.

The Time of Reaction to Stimuli According to Race or Social Condition.—Dr. L. Lapique gives the result of experiments made in 1893 on the inhabitants of the Andaman Isles, native savages, English convicts and officials, and also more recent experiments made at Paris on persons of different social rank. He concludes that variation in the time of reaction to stimuli is not due, as he first thought, to the position occupied by an individual in the ethnic scale, but to the functional, dynamic condition of the nervous system, which is well known to vary, according to the ensemble of the biological conditions. Thus, the Negritos in replying to tactile excitations, took generally 0.19 of a second; the Hindoos, 0.22; the Europeans, 0.15, the time of reaction in the Hindoos being notably longer than in the Negritos, who are, however, at the bottom of the ladder racially. The results were different when Dr. Lapique studied individuals of the same race occupying different social conditions. Students reacted to excitation in 0.15 of a second; Parisian workwomen in 0.17; alcoholics, fatigued or exhausted persons in 0.18 of a second. The influence of race on the time of reaction is therefore illusory; that of the functional, dynamic nervous system is incontestable.

A Monument to Pasteur.—Pasteur's monument will be more lasting than bronze, yet, though a statue cannot add to his renown, it may serve to indicate the place he holds in the hearts of his countrymen and lovers of scientific greatness the world over. It is regrettable that scientists are not rich, otherwise there would be no difficulty in collecting the necessary funds to pay for the statue. It is rumored, however, that the French sculptor entrusted with the work is so enamored with Pasteur's greatness that he

proposes to do all the work at his own expense. The statue to be erected in the little village of Dole, where Pasteur was born, will be of colossal proportions, and, when finished, will be a great work of art. The total height will be eight metres. The pedestal is a massive round column on a square base, the front of which is decorated with an allegorical group of figures, symbolizing suffering humanity and science bearing a wreath for the departed. Pasteur himself is represented standing in a pensive attitude, with chin lightly supported by one hand, as if engaged in solving some scientific problem. The likeness is said to be perfect.

Can the Clothing of Well People Carry Disease?—The *Hospital* says that "The daily life of every doctor appears to give the lie to any such idea," and it quotes the opinion of Dr. Doty, health officer of the port of New York, that infectious diseases are rarely communicated by means of clothing. Most physicians are of the same opinion, inasmuch as they visit cases of infectious disease and go directly to other patients without change of clothing or other disinfection than washing of the hands. Health inspectors also visit infectious cases in the same manner. In families where scarlet fever exists, the adult members who are actively employed outside, are allowed to continue their business without interruption if they do not enter the apartment of the sick when at home; but in many cases there is not much attempt to avoid contagion in these cases, as the patient roams about the house or apartment at will. Nurses in attendance on cases of contagious disease are in a different position, on account of the prolonged exposure and intimate contact between them and their charges.

The Canadian Medical Association.—Owing to this journal coming out always sharp on the 1st of each month, it was impossible for us to wait to publish the Report of the Canadian Medical Association meeting at Winnipeg, which opened on August 28th, in the September number. We have made arrangements, however, to publish a very full and interesting account of the meeting in next issue.

OLD Trinity Medical School, on Spruce Street, looks particularly well and most attractive after receiving a coat of paint and being otherwise improved and made ready for the coming winter's work.

PERSONALS

DR. R. B. NEVITT left for the Pacific Coast ten days ago.

DR. A. J. JOHNSON returned from England on the 24th of August.

DR. GEIKIE returned from the Maritime Provinces on the 14th ultimo.

DR. ALEX. MCPHEDRAN returned from England on the 20th of August.

DR. AND MRS. A. O. HASTINGS left the city two weeks ago for the lakes.

DR. A. W. MAYBURY is now devoting his time to nose, throat and chest diseases.

DR. YOUNG returned from Atlantic City, N.J., where he had spent two weeks, on the 13th ultimo.

WE beg to tender to Mrs. (Dr.) Overton Macdonald, of 329 College Street, sincere sympathies *re* the sad death of Dr. Macdonald last month.

DR. J. J. CASSIDY, with his family, has been summering at Long Branch. The Doctor has a very fine cottage at that increasingly popular resort.

THE *Canada Lancet* has now passed out of the hands of the medical profession, having been purchased by the Ontario Publishing Company, of Toronto.

DRS. Alex. McPhedran and J. T. Fotheringham, of Toronto, received a very warm welcome at the hands of their brethren in London, while attending the Congress held there.

DR. H. B. ANDERSON was married August 14th, and on his return will occupy the house on Carlton Street recently vacated by Dr. Herbert Bruce, who was his groomsmen.

DR. BRUCE RIORDAN, of Toronto, and Dr. Hutchinson, of Montreal, left for the Pacific Coast two weeks ago, and will be gone a month. They will attend the meeting of the Canadian Medical Association at Winnipeg on their way back.

WE are very glad to know that Dr. D. A. Dobie, who for years practised on McCaul Street, Toronto, but who left for New York some time ago, is doing so well. The Doctor has taken up eye and ear work, and, besides doing a very nice practice of his own, is connected actively with the ophthalmological department of more than one of the hospitals in Greater New York.

The Physician's Library.

BOOK REVIEWS.

Practical Surgery. A Work for the General Practitioner. By NICHOLAS SENN, M.D., Ph D., LL.D., Professor of Surgery, Rush Medical College, Chicago. Handsome octavo volume of 1,133 pages, with 650 illustrations, many in colors. Philadelphia and London: W. B. Saunders & Co. 1901. Cloth, \$6.00 net. Canadian Agents: J. A. Carveth & Co., Toronto, Ont.

As the distinguished author states in his preface, this work is particularly intended for the general practitioner, and there is much appropriateness in this remark, for, of necessity, many minor and some major surgical operations are called for in portions of the country far removed from hospitals. A good knowledge of anatomy and a dexterous hand often enable a surgeon to cope with great difficulties, particularly in emergency work. It is very proper then, that the young practitioner should familiarize himself with all the more important advice and instruction that modern surgery can bring to his aid for the thorough and effective performance of such surgery as may fall to his lot. This, Dr. Senn has very amply supplied.

The work is subdivided into twenty-nine chapters, in which the following subjects are treated: Emergency and military surgery, traumatic shock, general anesthesia and local anesthesia, prophylactic hemostasis and treatment of hemorrhage, wounds and wound treatment with antiseptics, gunshot wounds, rupture of the urethra, fractures (general, special and compound), dislocations, exploratory puncture, subcutaneous and parenchymatous medication, paracentesis and drainage of suppurating joints, septic catheterisation, emergency operations on the air passages, empyema, peritonitis, appendicitis, intestinal obstruction, enterostomy, colostomy, abdominal section, enterorrhaphy, anatomico-pathologic forms of obstruction, strangulated hernia, intestinal fistula, resection of joints, amputations and disarticulations. A full index is supplied.

The author expresses himself with ease and precision. He does not hesitate to offer lessons, drawn from his own operative experience, which has been extensive. The illustrations, many of which are colored, add much to the value and beauty of the work. As a specimen of bookmaking the work reflects great credit on the publishers, the text being clear and legible.

Although rather large for a handbook of surgery, it is just the kind of book a practitioner will cherish as a desk companion.

J. J. C.

Pathologie Générale et Experimentale les Processus Généraux.

Histoire Naturelle de la Maladie Héritée—Atrophies—Dégénéscences Concrétions—Gangrènes. Par MM. A. CHANTEMESSE, Professeur de Pathologie Experimentale et comparee à la Faculte de Medecine de l'Universite de Paris; Medecin des Hopitaux; et W. W. PODWYSSOTSKY, Doyen de la Faculte de Medecine d'Odessa; Professeur de Pathologie Generale à la même Faculte. Avec 162 figures en noir et en couleurs, Paris: Ancienne Librairie G. Carre et C. Naud. C. Naud, Editeur, 3, Rue Racine. 1901.

This is the first volume of a work on general pathology, a second volume being promised for next year. The authors, a Frenchman and a Russian, have joined forces and produced a notable work, their aim being the expression of scientific truth without prejudice. As they say, "the experience of a careful practitioner, unskilled in general pathology, was gained in former days by twenty or thirty years of work. Nowadays an equal advantage is within the reach of every hard-working, conscientious student of medicine, who does not begin the study of clinical medicine until he has thoroughly mastered the essential elements of general pathology."

The volume is divided into nine chapters, the following subjects being fully treated: Definition, propagation, course and termination of disease, general etiology of diseases, atrophic disorders of the cellular nutrition, degenerations, albuminoid degenerations, degenerations with coagulation of protoplasm, glycogenic degeneration, fatty degeneration, pigmentary degeneration, incrustations, deposits, concretions, necrosis, mortification and gangrene.

Two indexes are added, a bibliographic index and an alphabetical one. There are many beautiful plates, the colored ones being particularly graphic. The printing is very well done. The volume is bound in paper, but is worthy of a stronger and more ornamental cover.

J. J. C.

Cliniques Medicales Iconographiques. Par MM. P. HAUSHALTER, G. ETIENNE, L. SPILLMAN, CH. THIRY. First number. Paris: C. Naud, Editeur, 3 Rue Racine.

The first number of this atlas bears promise of a most valuable and important work. There are fifty-three figures given, illustrating varieties of progressive muscular atrophy.

The large clinics in nervous diseases in France enable the authors to give a most valuable collection of illustrations. This comparatively obscure and rare affection can be better elucidated through the eye than by any other means.

The most careful verbal description could not always express with as much lucidity the remarkable changes, attitudes, deformities and expressions of these patients. Clinical photography serves to revive with great precision the recollection of analogous conditions previously observed; it gives form to notions otherwise vague concerning morbid conditions verbally described but not observed, and to those that are seldom seen and hurriedly studied; it fixes the external forms and manifest signs in a group of cases whose clinical history may have been most minutely given in terms the most appropriate; and it permits one to bring the salient points into bold relief. It supplies a means for comparison in all cases which resemble each other, and demonstrates at a glance the analogies and differences; it becomes a means for clearing up the limping diagnosis of the physician whose opinion remains undecided in the face of a clinical fact not clearly set forth in any verbal description.

Not only are there cuts which speak almost with the force of living figures, but the text is clear and concise and sufficient in extent to explain the illustrations. The printer's part is so well done that it is a veritable work of art.

B. E. M.

International Clinics. A quarterly of clinical lectures and especially prepared articles on Medicine, Neurology, Surgery, Therapeutics, Obstetrics, Pediatrics, Pathology, Dermatology, Diseases of the Eye, Ear, Nose and Throat, and other topics of interest to students and practitioners, by leading members of the medical profession throughout the world. Edited by HENRY W. CATTELL, M.D., Philadelphia, with the collaboration of Jno. B. Murphy, M.D., Chicago; Alex. D. Blackader, M.D., Montreal; H. C. Wood, M.D., Philadelphia; T. M. Rotch, M.D., Boston; E. Landolt, M.D., Paris; Thos. G. Morton, M.D., and Chas. H. Reed, M.D., Philadelphia; J. W. Ballantyne, M.D., Edinburgh; and John Harold, M.D., London, with regular correspondents in Montreal, London, Paris, Leipsic and Vienna. Vol. II., eleventh series, 1901. Philadelphia: J. B. Lippincott Co. Sole Canadian Agent: Charles Roberts, 1524 Ontario Street, Montreal.

It has been with more than ordinary pleasure that we perused Vol. II. of Series XI., "International-Clinics." In a word, it is the best of all, the matter it contains and the manner in which the publishers have done their part being thoroughly up-to-date. The colored plate in the frontispiece showing a mild variola is exceedingly delicate, beautifully executed and as natural as life. The lecture which drew our attention most was that on small-pox, by Dr. J. F. Schamberg, of the Philadelphia Polyclinic. This chapter is exceedingly timely, coming, as it does, when Canada has experienced, and is still experiencing, quite an epidemic of this disease. The author gives a most interesting lecture on variola, and the half-tone illustrations are amongst the finest we have seen, showing the eruption at different stages. Our friend, Dr. A. D. Blackader, of

Montreal, contributes a lecture upon "The Acute Dilatations of the Heart met with during Childhood and Adolescence." The Canadian agent for this series is Charles Roberts, 1524 Ontario Street, Montreal.

Pro Patria. By MAX PEMBERTON, author of "Kronstadt," etc. Illustrations by A. Forestier. Toronto: The Copp, Clark Co.

This new and startling romance of our own times is indeed a "novel" in the true sense of the word, inasmuch as the hero, instead of being a gay cavalier of historical times, is an inanimate thing, being no other than a "tunnel" eating its way beneath the waters of the English Channel.

The narrator of the story is a young Englishman, Alfred Hilliard by name, who for some time has been resident in France, and who becomes accidentally involved in the fate of the "Great Tunnel" by means of which the French intend to satiate their eternal hatred of England.

As an Englishman, Alfred Hilliard feels it his duty to report his discovery to the British Government, but is closely watched by the French to prevent him divulging the great secret of the progress of the tunnel, which is slowly creeping towards his native land. The daring scheme is just frustrated by his efforts when on the brink of success.

Although the plot is visionary, yet it is possible that some day it may become a reality, and this subject of a tunnel under the English Channel makes the story one of absorbing interest to every Englishman.

Bound in our national colors, with a background of kharki, and illustrated beautifully in black and white, "Pro Patria" is a novel which will find its way into multitudes of our best homes.

W. J. W.

Panama and the Sierras: A Doctor's Wander Days. By G. FRANK LYDSTON, M.D.

"The shoemaker to his last and the carpenter to his saw," is an old-time expression and full of much truth. A few doctors have attained some eminence as authors, but they were generally the sons of men who had no idea what avocation their offspring was really intended to follow, and so they were sent to a university and in due time emerged with an M.D. attached to their names, which profession time soon proved they were never destined to follow, as their attainments were to be exerted in a different role in the struggle for existence. If this book is an indication of this particular condition of affairs, the author is certainly not of the class above mentioned, but should have stuck to his chosen profession, where undoubtedly he has achieved much fame, and leave the writing of books to those more capable. The scenic description in some places is fair, the portrayal of Chinese character questionable, and the attempts to be witty are sorrowful. The trip extends from Chicago to New York, thence by steamer to Panama, north along

the western coast of Mexico and California to San Francisco, and finally ends in the worn-out gold fields of California. The book is published by the Riverton Press of Chicago. A. J. H.

The Hygiene of Transmissible Diseases: their Causation, Modes of Dissemination and Methods of Prevention. By A. C. ABBOTT, M.D., Professor of Hygiene and Bacteriology, University of Pennsylvania. Third edition, revised and enlarged. Octavo, 351 pages, with numerous illustrations. Philadelphia and London: W. B. Saunders & Co. Canadian agents, J. A. Carveth & Co., Toronto. Cloth, \$2.50 net.

There is no branch of medical study which has made such strides during the past few years as the causation, methods of dissemination and prophylaxis of disease. Hardly a year elapses that some new thing is not advanced as to the manner in which some of the specific infectious diseases are spread, so that a work upon that subject without constant revision would very soon become stale and obsolete. Dr. Abbott's "Transmissible Diseases" received a good reception when first placed in the hands of the medical profession and deservedly so; but his third edition is still better, being fully and in every respect up-to-date and modern in the opinions expressed. The twenty pages devoted to those diseases due to animal parasites are full of interest and well worthy of careful perusal, proving how important a part may be played by the animal kingdom in the dissemination of disease.

Purulent Nasal Discharges, their Diagnosis and Treatment. By HERBERT TILLEY, M.D., B.S. (Lond.), F.R.C.S. (Eng.). Surgeon to the Throat Hospital, Golden Square; Lecturer in Diseases of the Nose and Throat, London Post-graduate College. London: H. K. Lewis, 1901. Pp. 133. Price, 4s.

In no department of medical science has there been greater advance during the last few years than in our knowledge of chronic suppuration of the accessory cavities of the nose. This knowledge is hidden away in the pages of the journals devoted to rhinology; but little has filtered into the text-books devoted to diseases of the nose, still less into those devoted to general surgery. Dr. Tilley has delivered some lectures on this subject, and these form the basis of the present book. The standard work on the subject is Grunwald's "Nasal Suppuration." This may well be read as an addendum. J. M. M.

Sexual Hygiene. Compiled from books, articles, and documents, many not heretofore published, by the editorial staff of *The Alkaloidal Clinic*. Chicago: The Clinic Publishing Co., 1901.

A subject such as this has been avoided altogether too much by writers during late years. This is due to a sense of pro-

priety, no doubt, or one of ultra modesty, shall we call it. No physician, no matter what amount of study he may have given to the subject, but feels that he might be criticized were he to launch forth and put in writing what he feels, and that correctly, even his fellow-practitioners know too little about. There is very little doubt that it is due to this idea of modesty that a wider knowledge in matters of sexual hygiene is not more general, and the profession are under a debt of gratitude to the publishers of this little book for the valuable matter contained within its pages. It is full of practical facts—facts which it would be well were they to become more disseminated, and by that means the public weal the better considered. The book is divided into twenty-seven short chapters, and can be procured by any physician from the publishers for the small sum of one dollar.

Atlas and Epitome of Obstetric Diagnosis and Treatment. By DR. O. SHAEFFER, of Heidelberg. From the second revised German edition. Edited by J. CLIFTON EDGAR, M.D., Professor of Obstetrics and Clinical Midwifery, Cornell University Medical School. With 122 colored figures on 56 plates, 38 illustrations, and 317 pages of text. Philadelphia and London: W. B. Saunders & Co. 1901. Cloth, \$3.00 net. Canadian Agents: J. A. Carveth & Co., Toronto.

This volume takes up the different and more frequently recurring obstetrical operations, and there are but few general practitioners who will not be well repaid by a careful study of the book. How often does it occur that a physician comes unexpectedly face to face with an obstetrical case which puzzles him as to treatment. The mere perusal of one or two of the fine lithographic illustrations contained in Dr. Shaeffer's Atlas will often be enough to simplify just such a case, so true to life and natural are they. The Atlas goes into the symptomatology, diagnosis and prognosis very well, the whole book striking us as being not merely an adjunct to the larger text-book, but more valuable than many works double the size.

Golden Rules of Hygiene. By F. J. WALDO, M.A., M.D. (Cantab.) D.P.H., Barrister-at-law, etc. "Golden Rule" Series No. X. Bristol: John Wright & Co. London: Simpkin, Marshall, Hamilton, Kent Company, Limited.

This is one of the "Golden Rule" series, and is of waistcoat pocket size.

The writing of so condensed a work on hygiene is a more difficult feat than the preparation of a more pretentious work would be.

Essentials only are given. Such a book should be popularized, as it tends to give accurate ideas on hygiene to people who would

not otherwise read a line on the subject except in a newspaper. It may also serve as a remembrancer to those who know something of the subject. The prominent points under (1) Air, (2) Water, (3) Disposal of Refuse, (4) Food, (5) Infectious Diseases, are put briefly but cogently.

J. J. C.

Essentials of Refraction and of Diseases of the Eye. By EDWARD JACKSON, A.M., M.D., Emeritus Professor of Diseases of the Eye in the Philadelphia Polyclinic. Third edition, revised and enlarged, 12mo, 261 pages, 82 illustrations. Philadelphia and London: W. B. Saunders & Co., 1901. Toronto: J. A. Carveth & Co. Cloth, \$1.00 net.

This edition has been revised and very much enlarged, and is consequently more complete and more symmetrical than the earlier editions. Injuries of the eye by traumatism, and the ocular symptoms and lesions of general disease are now given a consideration proportioned to their importance to the general practitioner. The entire ground is covered, and the points that most need careful elucidation are made clear and easy.

J. M. M.

Etidorpha, or the End of Earth. The Strange History of a Mysterious Being and the Account of a Remarkable Journey. By JOHN URI LLOYD, author of "Stringtown on the Pike," with many illustrations by J. Augustus Knapp. Eleventh edition, revised and enlarged. New York: Dodd, Mead & Co., 1901.

A rich blending of fiction and science, a combination rarely successful; but here the deeper reasoning on such scientific matters as heat, light and gravitation are presented to the reader in such a fascinating and clear manner that he is astonished to find what a large amount of useful knowledge he has acquired while buried in this strange romance. Certainly the holiday kit will not be complete without it.

W. H. P.

The Observations of Henry. By JEROME K. JEROME. Toronto: The Copp, Clark Co., Limited. Cloth.

Jerome's short stories, or rather the bits of human clay he uses upon which to build his tales, are often as surprising to the reader as the dose of quinine concealed in the chocolate drop to the physician's small patient. Very diverting are *The Observations of Henry*, the waiter, who tells of the people he waits on in the London coffee houses, then as he ascends the ladder and gains prestige as a "slinger up of the hash" he becomes "Henri," and goes to the continent. His experiences are numerous, varied, very droll, and well told. In a word, this small book can be read aloud in the bosom of one's family ere the clock cuckoos the midnight hour.

W. A. Y.

The Canadian Year Book for 1901. Fourth year, 25 cents. All about Canada. Published by Alfred Hewett, Toronto.

To any one wanting information of any kind about any part of this Canada of ours, we respectfully but emphatically refer them to *The Canadian Year Book* for the current year. It is the cheapest 25 cents worth of information procurable. Go to it if you want to know all about the Tariff of Customs, List of Post Offices in Canada; all about the Ontario Agricultural College and Experimental Farm, the list of Governors-General, Lieutenant-Governors, Senators, Members of Parliament, Militia List, and Sporting Record. *The Canadian Year Book* is truly a "*multum in parvo*."

Doom Castle: A Romance. By NEIL MUNRO. Toronto: The Copp Clark Co., Limited. Edinburgh and London: William Blackwood & Sons.

"*Doom Castle*" is a most fascinating description of the life and adventures of a French nobleman in the Highlands of Scotland. The scene is laid in Argyleshire in the year 1755. The skilful introduction of the Jacobite conspiracies lends color and interest to the romance. The plot is well sustained; the descriptions of Highland character and scenery are very cleverly sketched. It is altogether a delightful book and well merits a careful perusal.

J. J. C.

PUBLISHER'S DEPARTMENT.

At the Ninth International Congress for Hygiene and Demography, held in Madrid in April, 1898, Professor Finkler, of Bonn, made his first communication on Tropon, under the title of "Albumen Nutrimient." He said as follows: "Through the courtesy of Professor Finkler I received a quantum of Tropon several months ago with which I began my experiments in feeding tuberculous patients. The results were so encouraging that I wrote for an additional supply. I selected patients with whom I had had unusual difficulty in increasing their weight, with some among them on account of their aversion to fats. To summarize the results obtained, I may say that with from one to two ounces per day the average gain in twenty days was about one pound and a half, including one case with negative results. I must, however, add that these patients were mostly ambulant. In Weicker's sanatorium in Goerbersdorf, where patients in all stages of the disease are admitted, from out of eighteen cases fifteen responded to the treatment, gaining in the average $2\frac{1}{2}$ pounds in four weeks. The relatively better results obtained in the sanatorium must be ascribed to a better supervision and a more regular administration of the Tropon than is possible with ambulant patients. Tropon has since been extensively used with satisfactory results in the clinics of von Leyden and Senator in Berlin; Schmilinsky and Kleine in Hamburg."



THERMOL is a white, crystalline, odorless and tasteless synthetic alkaloid. It is the best heat dissipator of the synthetics, because of the removal of the phenyl or anilin poisonous properties during the process of manufacture. There is, therefore, no need of associating any heart stimulant along with it to keep it from doing harm, because it is not of itself a heart depressant, being absolutely safe to use alone even in the presence of cardiac disease.

Thermol is a true *thermotaxic*, and acts by restoring the normal heat-regulating powers of the nervous system.* It prevents the formation of heat by stopping increased tissue combustion through its sedative and controlling influence over the nervous centre. It increases arterial pressure by stimulating the heart and vasomotor system. Its force, in alliance with the forces of nature, combats disease force.

The *analgesic* action of Thermol is as energetic and permanent as its antipyretic. This valuable property makes it an effective remedy in *neuralgia*, *rheumatism*, *gout*, etc., which fact, along with its safety in regard to the affected heart, makes it a valuable acquisition to the physician's armamentarium. Its action on the spinal cord renders it quite serviceable in *pertussis hysteria* and *asthma*.

The *nerve calming and soothing* effects of Thermol give it an agreeable soporific sensation that is especially gratifying to sufferers from *typhoid* and *similar diseases*, on account of the natural refreshing sleep it produces.

Thermol is also an *antiseptic*, exerting this valuable property both in the gastro-intestinal tract, and in the blood, and thus inhibits the culture of the germ of the disease. This property seems very manifest in *typhoid fever* and *pneumonia*. In fact, it seems to be almost a specific, and able to abort many cases when administered at the beginning of these diseases.

Having come to a knowledge that its physiological action is that of an analgesic antipyretic, nerve calmativ and antiseptic in the blood, we pass on to its use in *la grippe*, and *pneumonia*, where it

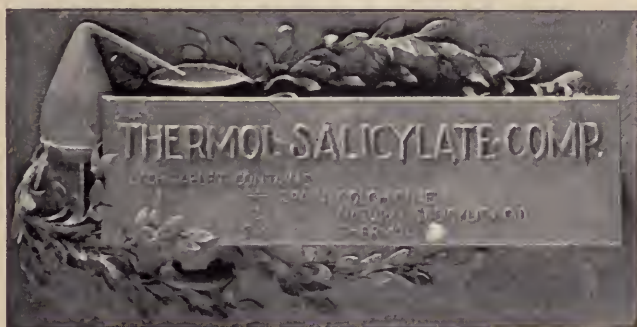
combines all four of these strong qualities, and has often proven itself a matchless remedy in 5 to 8 grain doses. In its efficiency in these diseases it positively seems to have no equal. The *dose* is to be regulated according to the severity of the febrile attack, with this assurance, that the remedy is not injurious, and that there will be no distressing after-effects when we come to its use.

In *phthisis* we find that it requires but a small dose to afford quite a relief, and gives much needed sleep.

In *typhoid*, *malaria*, and *scarlet fevers* Thermol should be given in 3 to 5 grain doses through the whole course of the disease, because of its antiseptic properties in the blood. In these diseases it maintains a moist skin and mucous membranes, a quiet, restful condition, preventing delirium and other unpleasant nervous symptoms, maintains elimination, saves exhaustion of the patient, and thus *preserves the tissues of the body* better than any other known remedy or treatment.

In *pertussis*, in 1-2 to 3 grains every two to five hours, it ameliorates the severity and frequency of the paroxysms. Being tasteless, children do not object to it.

In *dysmenorrhea*, *gout*, *rheumatism*, *neuralgia*, *angina pectoris*, *nervous headache*, we find that Thermol does its work quietly and gradually, but very effectively, in 5 to 15 grain doses. Its peculiar cooling and soothing properties are much appreciated by sufferers from *migraine*.



The reason why salicylic acid has, of late years, lost prestige in the treatment of rheumatism has been solved by Prof. Charteris, of Glasgow. He has found that the *synthetic* or *artificial* salicylic acid (which is made from carbolic acid) contains such toxic substances as cresotic, parahydroxy-benzoic and hydroxysophalic acids, and that ten grains of the salicylic acid obtained from coal tar will kill a rabbit weighing two and one-half pounds, whilst the *natural* salicylic acid obtained from natural oil of wintergreen has no injurious effects whatever on a rabbit of the same weight. The *true*

or pure natural salicylic acid is possessed of strong antiseptic and antipyretic properties, in addition to it being an antidote for the uric acid diathesis, and is, as shown by Prof. Charteris, free from heart depressing qualities. This pure natural salicylic acid combined with the alkaloids colchicine and thermol forms a triple alliance that will afford positive relief in all true rheumatic and gouty conditions and hasten the elimination of urea and uric acid from the system. The best results are obtained by administering a tablet every hour for 12 to 15 consecutive hours each day.



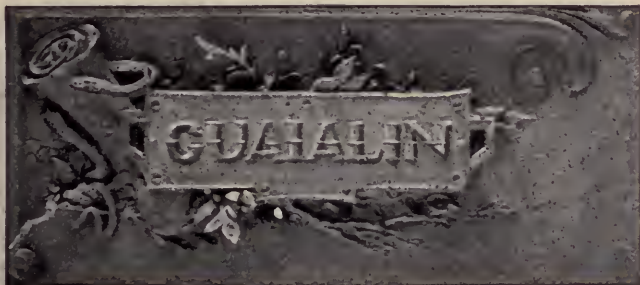
Iodomuth is a new preparation of bismuth containing 25 per cent. of iodine in a permanent and unirritating form. In color, it is of a reddish brown; in form, it is an impalpable powder, and is both odorless and tasteless.

The physiological action of Iodomuth is that of an alterative and stimulating antiseptic, possessing desiccating, deodorizing and sedative properties.

The uses of Iodomuth are many, because it is undoubtedly "the *par excellent* healing agent." As an alterative and stimulating antiseptic, without odor or irritating qualities, it is much superior to iodoform, both internally and externally, in its wide field of usefulness. Its desiccating properties render it very valuable as a hemostatic in dental and minor surgery, and in gastric or intestinal hemorrhage. The deodorizing and sedative properties of Iodomuth cause it to be of good service in the treatment of catarrhal and ulcerative conditions, more especially of the stomach and intestines. Theoretically, Iodomuth should be remarkably curative in gastro-enteritis, dysentery, cholera infantum, or summer complaint. Practical experience at the bedside has proven that it is, and that it does its work better, than any other remedy.

The use of Iodomuth as an external application, either in the form of a dusting powder or in an ointment, is quite extensive, as learned by a knowledge of its physiological action. In obstinate cases of rhinitis and suppurative otitis media "it is more efficient

than any other dusting powder." In indolent, or leg ulcers, it is a most valuable remedy. In chancroidal, syphilitic, or tubercular sores, Iodomuth is superior in all respects to any other medicinal agent. When given internally, the dose of Iodomuth is the same as in other bismuth preparations, namely, from one to ten grains, as occasion requires.



The natural phenol—guaiacol—is one of the most satisfactory remedies for internal medication in the treatment of pulmonary tuberculosis. The manner of its action is thought to be "through the formation of compounds in the blood, with the toxins produced by the presence of the tubercle bacillus in the organism, and assists in their elimination from the system"; and as a bitter tonic to the stomach, thereby increasing the amount of the digestive fluids and enhancing good assimilation, thus producing a gradual restoration of flesh and strength.

But the taste and smell of plain guaiacol are so objectionable, that the continued use of the remedy—which is so essential—cannot be kept on with.

This serious objection has been overcome in our organic compound—Guaialin, a white, crystalline, odorless and tasteless powder, which contains 55 per cent. of pure guaiacol, and at the same time *nonirritating* and readily assimilated.

Retaining all the good qualities of guaiacol, Guaialin is a mild antipyretic and analgesic, and an elegant antiseptic in all stomach and bowel troubles.

Under the continued use of guaialin in the early stages of pulmonary tuberculosis the number of bacilli grow less, coughing becomes easier, expectoration lessened, night sweats diminished, and the general physical signs improve under its influence.

Guaialin is very beneficial in bronchitis and influenza, as well as in pneumonia.

It may be administered either in powder or capsules, and the adult dose should be 5 to 8 grains every four hours, and gradually increased until twice that quantity is given.



Fermang is the name of our true organic union of iron, manganese and peptone, which contains .6 per cent. of iron and .2 per cent. of manganese.

Preparations claiming to be Peptonate compounds have become quite numerous. They are all represented as having special merits in the attainment of an easy absorption and administration where iron and manganese are medicinally required.

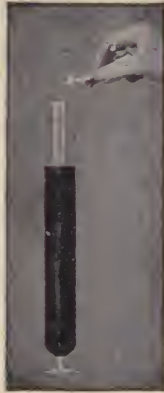
For a moment let us consider what is intended to be accomplished by these newer organic compounds as contrasted with the older recognized standard preparations.

Where the object is to impress the tissues with which they come in contact in the act of ingestion, or while present in the alimentary canal; where the contents of the viscera into which they enter are to be affected by their chemical or physical properties; in other words, when astringency, irritation, antiseptics or decomposition are to be affected by action on the absorbing membrane, or on the substances with which it is physiologically concerned, then the older drugs are probably best suited for the work. But where it is desired that the blood and tissues should be reached by a substance capable of exercising a restorative and specific influence, with the least incidental change either in the drug or in the organs concerned in introducing it, then the newer compounds will be far the more available. Such conditions as anemia and chlorosis are due to the lack of certain organic constituents of the economy, which the laboratory can furnish ready for immediate assimilation. To introduce these in the most direct manner is the ideal achievement of the therapist.

To be wholly desirable, a preparation of this nature should have sufficient permanence of chemical constitution to reach the blood in the state in which it is swallowed; should be non-toxic, should rapidly restore the normal corpuscular standard of the blood, and should be without disturbing effect on the digestive processes.

Clinical observation, which by this time has been quite extensive, has proved all these properties existent in a high degree in Fermang.

Drop a little tannic acid in Fermang and note the absence of tannate of iron; thus proving the true organic compound.



The stools are not blackened nor changed from the normal while Fermang is administered. It also proves that the metallic elements are not precipitated from the solutions, and that the *entire* dose is absorbed. No constipation ensues, and the digestion is in no way deranged.



The recent great strides in organic chemistry have enabled us to produce in our laboratory a physiological compound of phosphorus in the form of a Syrup of Glycerophosphates, which comprises the glycerophosphates of iron and manganese, strychnin and quinin, and calcium, sodium and potassium.

The *raison d'être* for our placing this compound upon an already overcrowded market, is because science has proven that the phosphorus of the system is found as an organic compound, or

rather as a glycono-phosphate, a constituent of lecithin ($C_{44} H_{90} N P O_9$). The latter is a glycono-phosphate of neurin, which is an essential constituent of the brain and nervous system. The glycono-phosphates are absorbed directly into the system, and do not need to be chemically changed or digested in the stomach, as do the inorganic preparations.

In cases of nervous exhaustion and similar debilitating diseases, a large proportion of phosphorus, in combination with organic substances, is excreted by the kidneys and found in the urine, thus showing an increased loss of the lecithin of the system.

In its physiological action, syrup of Glycono-Phosphates accelerates metabolism, favors the assimilation of food-phosphates and of albuminoid substances, and increases the excretion of nitrogen, thus tending to lower the proportion of uric acid to urea, although it does not influence the formation of uric acid. It affords a protective influence to the combined phosphorus in the system, and causes a marked increase in the number of red blood corpuscles, as well as increasing the appetite and general weight. It diminishes glandular activity but stimulates tissue change.

Clinically, our Syrup of Glycono-Phosphates Comp. is indicated in all conditions of nitrogenous waste, which are associated with an increased quantity of phosphates in the urine, as for example: In chlorosis, diabetes, chronic nephritis, gout, uric acid diathesis, obesity, muscular atrophy, asthma, phthisis pulmonalis, phosphaturia, sexual exhaustion, the impotency of old age, convalescence from acute diseases, neurasthenia, exophthalmic goitre, sciatica, Graves' disease, etc., etc.

The dose is from 1 to 4 teaspoonfuls, plain or diluted in water, four times a day. Each teaspoonful contains the equivalent of 1-120th grain strychnin.

The Syrup of Glycono-Phosphates Comp. has proven itself a remarkable tissue-builder and reconstituent.

A REFLECTION.—“In your advertisement,” said the man with the suave manner, as he entered the office of the ice company, “You say there are no microbes on the ice that you furnish to your customers.” “Yes, sir,” replied the treasurer, as he placed a blotter in front of his diamond stud so that the caller would not have to blink, “and we stand by our assertion.” “I stand by it too,” said the man with the suave manner, “and I have called to say that, as I have no fear of microbes, believing they are harmless, I wish you would direct your delivery man to leave at my residence in the future ice of such dimensions that two or three microbes, if they felt so inclined, could occupy it without crowding each other.”—*Harper's Bazaar*.

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Original Contributions.

ADDRESS IN MEDICINE.*

BY J. R. JONES, M.D., WINNIPEG.

Mr. President and Members of the Canadian Medical Association,
—When the President of this Association deputed to me the honor of delivering the Address in Medicine, I had no little anxiety in the selection of a theme worthy of the occasion and which would command the interest of the members. This difficulty was accentuated by the fact that I had never attended any meeting of the Canadian Medical Association, and I had no knowledge of the addresses of my predecessors. However, at this particular juncture in the history of our profession in the Dominion of Canada, I have concluded it would be wise and, I hope, profitable to address you upon the unsolved problem of medical education. Its importance is especially manifest when we assume the possibility of the establishment of a Dominion Medical Board. It is necessary, therefore, for the various bodies engaged in teaching or in registration of qualifications to make ample provision and preparation for this long-looked-for event. Uniform or equivalent curricula will greatly facilitate paving the way for the accomplishment of Dominion registration. In Canada there are as many standards of medical education as there are political subdivisions.

The great aim of the medical profession, chiefly through the potent influence of this Association, is to create on a sound and enduring basis a Dominion Medical Board whose qualification can

* Read at Meeting of Canadian Medical Association, Winnipeg, August 29th, 1901.

be registered in every province of the Dominion. Nor should we rest here; its qualification should not only be Canadian but Imperial, capable of registration in Great and Greater Britain.

PRELIMINARY EDUCATION.

In Dr. Roddick's bill provision is made for the proposed Board to conduct the medical entrance examination by examiners appointed by the Dominion Council. It is desirable that examination in general education be left to the universities and such other institutions engaged in general education and examination as may from time to time be approved by the Board. Let the Council select or erect the standard of medical matriculation, and then accept educational certificates of equivalent or higher value for registration as a medical student. This is the practice followed in England by all bodies granting qualifications, except the universities.

For our students' matriculation we should fall back on the national educational bodies, whose examination should reach a specific uniform or equivalent standard. We can safely entrust this department to our educational institutions, which will receive the recognition and endorsement of the Dominion Medical Board. By accepting approved certificates the Dominion Medical Board is not only relieved of responsibility and expense, but more students will avail themselves of Dominion registration than if they are compelled to prepare on a range of subjects out of harmony with the curriculum of the institution in which they are receiving their education. Every university in the Dominion of Canada will receive equivalent certificates from sister institutions; and these universities also will receive partial certificates granting, for example, *pro tanto* standing to school teachers holding first and second class certificates. These certificates are accepted by the university in all branches—law, medicine and arts.

Medical examiners in England as well as in Canada are fully convinced that there is some defect in the preliminary education of medical students. The standard is not high enough. Many students pass into the medical colleges utterly unprepared to profit by the education of their medical teachers—their minds not being disciplined that they might be competent to engage in the difficult studies of the profession with advantage.

The question naturally arises, What should be the range of the medical matriculation examination? Should Latin be eliminated and modern languages be substituted? Should an elementary knowledge of chemistry, physiology and comparative anatomy be demanded? I think there should be no special preparation for the study of medicine—that it should be that preparation common to all educated professions. Notwithstanding the advocacy of the elimination of Latin in medical entrance examination by such eminent men as Huxley, Sir Willoughby Wade, Jonathan Hutchinson, Herbert Spencer and Sir John Williams, the weight of argu-

ment to my mind is in favor of its retention. I would even go a step farther and advocate the inclusion of Greek.

The justification of the advocacy of Greek lies in the cardinal circumstance that it is *par excellence* the language of science. A very large proportion of technical terms, compound scientific words and descriptive names used in anatomy and physiology, medicine and surgery, are derived from the Greek. Almost the whole of scientific and medical nomenclature is derived from Latin and Greek, especially the latter.

Permit me to quote two eminent authorities who favor the retaining of classical education as training for professional studies.

Dr. Alexander Hill, a member of our own profession, who is master of Downing College, Cambridge, says: "How to make a competent biologist; how to obtain that proper balance between the development of observation, the cultivation of the memory and the attainment of the ability to correlate and compare observations; to draw inferences, and to base hypotheses—'an early training in science is the surest guarantee of eventual proficiency.' To this my experience gives an emphatic denial. Science scholars often cause their tutors the greatest disappointment. Their appearance in the examination before they are nineteen years of age—the limit for the entrance scholarship—means too often that they are the boys who at the earliest possible age have deserted what we may call the proper work of the school for the sake of preparing for the science scholarship. They are not 'lads of parts,' but boys who have been crammed with scientific facts by clever teachers and taught how to show them off in the most impressive way. Their knowledge is often extraordinarily accurate and extensive. They have a magnificent test-tube acquaintance with chemistry, they have thoroughly mastered the elementary formulæ of physics, they have acquired the elements of botany and zoology—but they have no mental training. Let them work never so hard during their three years' course at Cambridge, they are quickly overhauled by the youngest boys from the big public schools, who when they came up did not know the test-tube from a barometer. The science scholar as turned out by schools 'with a successful modern side' is a prodigy of information and difficult to beat on the earlier levels of his subject; but as soon as he reaches that region of information where solid facts are left behind—a region in which is needed a nice appreciation of the relative cogency of arguments, the close following of a train of inferences—he is like a clod-hopper on a glacier, without feet to grip or a heart to dare."

This, gentlemen, is the result of the experience of the Master of Downing. My second authority is Professor Jebb, of Berlin, who summarises under the five following headings the advantages of classical education:

"1. Ignorance of Latin and Greek is a positive obstruction to the pursuit of many branches of study.

"2. Ideality of the scientific sense is cultivated by studies which have not an immediate bearing upon daily life.

"3. An actual knowledge for its own sake is promoted by them.

"4. The power of thinking receives a varied general exercise in these studies.

"5. They are of historical value as illustrating the foundations on which so much of modern thought and life has been built."

This subject was discussed in the German Federal Council last year, and at the conclusion a resolution was passed affirming that the certificates of classical education should alone give the right of admission to the medical examinations. A few years ago Berlin University expressed a very decided opinion upon the question, and furnished a series of reasons for maintaining classical studies as a basis of professional education. The utilitarian and educationalist, who, vandal-like, would exclude classics from the preliminary examination, desire instead a knowledge of science, physiology, anatomy, biology, etc., thus partially relieving the medical curriculum and affording a partial preparation for the professional course.

Others, Professor Schaeffer, for example, more wisely recommend a year's course in science sandwiched between the passing of the preliminary examination and the student's entrance at a medical college. This is an ideal plan, but is scarcely practicable in Canada. I consider it a great mistake to cram in small elementary scraps of scientific information designated as "science" in the schoolboy's curriculum. Science should not be taught until a sufficient knowledge is acquired of the ordinary subjects of general education; hence it cannot be taken up till the final period of school life. The meagre scientific equipment of our schools and the unfitness of our teachers would render the teaching of science very elementary and most confusing.

Scientific knowledge and education thus produced would be of no appreciable practical value in a medical career. In regard to the subjects embraced in the medical matriculation, the most lamentable defect is in the English paper. This is the most neglected subject in our primary schools. The same defect exists in England. At a recent teachers' examination in England, the majority of those rejected came to grief over the English paper—a composition on the prosaic subject of tramways. The teachers were in revolt and demanded a revision of their papers, which confirmed the examiners' verdict.

The majority of rejections at the Conjoint Board in England were attributable to the results of a defective knowledge of English.

Having acted for many years as an examiner at our University, I have concluded that the teaching of English takes a very subordinate position in our schools. Spelling and composition prove that English takes a third or fourth position. Students from all parts of the Dominion present themselves at our Uni-

versity examination, and the same defect exists among the students from other provinces of the Dominion. It is obvious that English ought to be a prominent subject of the medical matriculation examination. Every student should be able to express his thoughts coherently and intelligently.

In this country of magnificent distances I suppose it is impossible to have a Medical Teachers' Association. Certainly such a competent body could deal with the revision of the medical curriculum as well as define the limits of the medical entrance examination. This important subject could not be delegated to this Association, which meets once a year for a few days at various points of the Dominion and mainly for the purpose of social recreation. Persistent, consecutive and complete work can never be accomplished by a committee of the Canadian Medical Association; it is rare for the members of any given committee to be in attendance at more than two consecutive meetings.

PROFESSIONAL EDUCATION.

The medical curriculum has subjects difficult to acquire, worthless as mental gymnastics, useless in practice and speedily forgotten when acquired. The methods of teaching are imperfect and vicious. The student in didactic lectures is not taught—he is over-lectured and undertaught. The lecturer describes rather than demonstrates, and instead of making the student follow him step by step in his methods of observation, collecting, comparing, testing and recording facts and of reasoning thereon, the didactic lecturer leaves them to be learned by being described, forgetful that they can be learned only by being practised.

The main tendency of the present method of didactic lectures is to give students smatterings of scientific knowledge at the cost of that thorough knowledge of their art which is essential to its successful exercise. In the curriculum there is overlapping of similar subjects in the didactic and clinical courses. The course of didactic lectures should be entirely abolished or radically modified. Teaching should be bedside work—oral and written examinations with comments by the teacher. In analyzing the didactic course, I would like to direct the attention of the Association to several defects and useless waste of time which could be more profitably employed.

What earthly use is there for a didactic lecture on descriptive anatomy, a subject which can only be mastered in the dissecting-room? Professor McAllister, of Cambridge, states "that anatomy being a practical subject can be learned only in the dissecting-room." The line of demarcation between descriptive and practical anatomy is arbitrary and fanciful. In a large class in descriptive anatomy, the favored few near the lecturer and dissected part derive some instruction, but to all the rest the hour is useless and wasted. Persistent work in the dissecting-room under the guidance of an experienced demonstrator who will describe, discuss and

constantly orally examine the student is a rational and effective method of teaching anatomy.

Another useless subject is medical jurisprudence; the interest in it ends after the examination, and to the general practitioner the knowledge thus gained is of no practical value. Few men are called upon to give evidence in criminal cases, and when we are, the knowledge acquired while at college is either useless, fragmentary or forgotten, and in order to cut a respectable figure in court, we frantically read up Taylor and Reese. All knowledge is useful, but that derived from medical jurisprudence is about as practical to the general practitioner as the geography of Timbuctoo or the philosophy of Confucius.

The object of medical teaching is to turn out good practitioners.

Another subject which, as at present taught, is a weariness to the flesh is Sanitary Science. Its pretensions are stupendous; it is supposed to teach everything—land surveying, architecture, organic chemistry, agriculture, plumbing, drainage and civil engineering. The student is crammed with this conglomerate stuff which he must intelligently reproduce at the annual examination. In sanitary science we have a splendid exemplification of the "cram" system and the utter uselessness of the knowledge, the very essence of smattering.

In order to show the uselessness of the hard work expended in Sanitary Science, I will quote a few questions from the examination papers on this subject:

"1. What do you understand by the expressions 'effective population,' 'dependent population,' and 'density of population.'"

"2. Define the word 'nuisance' according to law. Show the statutory provisions under which nuisances may be dealt with."

"3. What impurities of a deleterious character may be found in bread."

"4. In the event of typhoid fever occurring in a family, what steps should be taken to ascertain that the water supply and sanitary fittings are in proper order?" (I will answer this question for the benefit of the association—"Send for the plumber.")

The questions I have quoted are well enough for the candidate for the science diploma, but of no use to the general practitioner.

The burden of the medical student of to-day is very great. More attendances at lectures are demanded, more subjects are being wedged into the curriculum. That conglomerate heap labelled "materia medica" might be treated in a bag and baggage fashion. It is impossible to encompass this large mass of dry technical knowledge in the students' course. *Materia medica* is a mere tax to the memory—the acquisition largely of bare facts being necessary, and facts that are neither retained nor applied. Mr. Huxley's views, in an address to the students of St. Mary's Hospital, are appropriate. He says:

"I am quite prepared to admit, and indeed I have always had a strong conviction, that there is something absolutely preposterous

in the volume and bulk to which some of our treatises on *materia medica* extend, and the enormous quantity of irrelevant matter, with which their pages are crammed."

What scraps of information can a didactic lecturer impart to his students which they cannot readily find in the text-book? An occasional quiz class, with specimens of drugs and their preparation, should take the place of the systematic lecture; in fact, let pharmacy and therapeutics take its place.

The careful perusal of the *materia medica* examination paper convinces me that in this subject there is a great deal of misdirected energy in the acquisition of evanescent knowledge, because it is mere verbal memorizing. Let me give a few examples culled from English sources. I would not cull examples from Canadian examinations for reasons that are very obvious.

"1. Name the pharmacopœial preparations into which *potassii tartras acidi* enters, and give doses. Describe the action of this drug.

"2. What is *lini farina*? Give its source and enumerate all the preparations into which it enters.

"3. Contrast the physical and chemical properties of castor oil and oil of turpentine."

Apropos of these very questions, Mr. T. Prigden Teale says: "This is the kind of rubbish that the elaborate and costly machinery of a public examination has to waste its energies on." This, I would say, is the stuff doled out by your didactic lecturer on *materia medica*, and which demands the bodily attendance of our students for the prescribed course.

My sympathy goes out to the overburdened medical student, weighed down by an accumulation of courses and annual examinations. His corporeal presence is required at so many lectures that he has little time, inclination and energy for hospital work, recreation and private reading.

Sir William Stokes truly says: "I have satisfied myself over and over again that the failure of a large proportion of candidates to answer up to the required standard was due, not to want of diligent or conscientious work on their part, but simply to brain exhaustion from an attempt to overload it with facts which were believed to be essential."

The system of imparting instruction by lectures is a mediæval custom originating when text-books were few, costly and inaccurate. It is a purely traditional system. Now that there are text-books in abundance covering the whole range, and of excellent merit, these lectures should be modified. The chief value of lectures is that the student is obliged to hear a certain quantity of a subject every day, whether he likes it or not, whilst no authority can compel him to work at a text-book except by moral suasion or arguments of a practical character addressed to his self-interest. A restricted number of lectures may be advisable, but the number could be abbreviated with advantage and confined to the inculca-

tion of principles; removing difficulties and obstacles from the student's path; explaining types and divergences of disease; giving information not within the pages of a text-book. The time hitherto employed in systematic lectures might be devoted to class examination on previously announced subjects in which the teacher should indulge in questions, explanations, corrections and comments. This is the true education—drawing out, instead of the pouring-in process.

The lecture system reminds one of the daughters of Danaus, whose destiny was to fill pitchers which could hold no water. The students are percolated receptacles of transitory knowledge.

Mr. Dennis Hovell, in his address to the Hunterian Society, very truly says: "Education is a subject much misinterpreted in word and abused in deed. It is intended literally to mean a drawing out of the faculties, but by being altered into mere pouring in and puffing up, it has often resulted in checking and repressing some of the most valuable of them. Its highly necessary adjuncts, discipline and training, are not only too often but too entirely neglected, and the want of these is much felt because it operates negatively by preventing and neutralizing the good effects of teaching."

We might with profit emulate our brethren in the United States in our methods of teaching. In that country there is an approach to the tutorial system. Students in the various subjects are divided into small sub-classes, each presided over by a lecturer. Each student receives individual attention in the small group or section instruction. It is simply a means of enabling the individual to see, hear and touch for himself under the best possible scientific guidance. His weakness is discovered; his knowledge tested; his observation is stimulated and cultivated; his attention rivetted; his application of the laws of thought employed, and rightly prosecuted—it is the inductive method applied to medicine.

The "case" method, advocated by Mr. Cannon, of Harvard University, in March, 1900, has received the endorsement of many teachers in England and the United States. This method is supposed to supplant the dreary, old-fashioned didactic lecture, and is an imitation of the plan adopted in the law department of Harvard. The plan is to secure printed histories of actual cases which perhaps the student may have seen in the hospital. Each student is previously supplied with a printed copy of the history for careful perusal some time prior to the discussion. The class and teacher meet and discuss the diagnosis, pathology, symptoms and treatment. Text-books and other literature are consulted, and the case is thoroughly threshed out. The student is learning the judgment of clinical data; the estimation and relative value of the various symptoms; distinguishing between the important and the unimportant, the common features and the more unique. He not only receives but acquires knowledge. The case method may supplant or supplement the didactic and clinical courses. This plan is

no experiment, for it has been on successful trial by several professors at Harvard; by Dr. J. White, of Philadelphia, and Dr. R. E. Riggs, of the University of Minnesota.

Possibly I may be prejudiced, but from personal experience I favor the English system of clinical clerkships and dresserships as the most feasible, practical and thorough for the development of medical teaching. It embraces all the advantages claimed by the advocates of the case system and the sectional plan. Moreover, the student is brought into direct contact with the patient for whose history he is responsible.

By this method the medical student is trained to habits of minute, careful, methodised observation and registration of the phenomena of disease. The student observes his cases from the incipient stage to either recovery or the *post-mortem* room, to the verification or otherwise of his daily recorded observations. Upon this solid foundation of actual personal experience, he builds to fit himself for life's battle.

DOMINION REGISTRATION.

The educational requirements of the proposed Dominion Board will completely determine the nature of the instruction imparted to all students at the medical colleges. If this Board is successful in securing even a modest number of candidates for its qualification, then the mandate of the Board will regulate the whole machinery of medical education, preliminary and professional, and the influence of this body will have far-reaching effects upon the profession in this country. The various medical colleges will be compelled eventually to conform to its regulations just as is the case between the teaching bodies and the General Medical Council of Great Britain. Although not endowed with the supreme prerogatives of the Medical Council of Great Britain, its enactments, regulations and requirements will practically have the same beneficent effects. Granting Dr. Roddick's scheme is launched, after some years, there will be conflict and confusion between the requirements and curricula of the Dominion Board and those of the licensing bodies of the various provinces of the Dominion, and these opposing requirements will tax the resources of the medical colleges to meet the necessities of the two classes of students—those desiring the provincial qualification and the others desiring the national one. Hence it is necessary that all medical colleges should have the same curriculum. The course should be identical, but the method of instruction should be left to the wisdom of each.

The alternative requirements suggested for the Dominion qualification may be summarized under the following headings:

1. The candidate must secure provincial registration before presenting himself for the Dominion license, and the Dominion Council would examine him in the intermediate and final subjects; the final examination to be passed five years subsequent to medical matriculation.

2. The second alternative is that the candidate must pass the Dominion Medical Board in all the subjects of the professional course, the primary and intermediate subjects to be taken under the supervision of the Dominion Medical Board at the various centres in which medical colleges are located.

In order that the license of the Dominion Medical Board should obtain a predominant position, I think it should demand examination in all subjects of the professional course. This hybrid examination, part by the Provincial licensing body and part by the Dominion Medical Board, might prevent us securing reciprocal arrangements with the Medical Council of Great Britain. This proposed joint scheme of examination might frustrate one of the great objects of Dr. Roddick's bill—registration in Great Britain.

Passing from the purely educational aspects of the question to the practical one, namely, the establishment of a Dominion Medical Board, the subject bristles with many difficulties—legal, financial and representative. The general Government of Canada cannot deprive the provinces of their vested constitutional privileges, nor can the Provincial legislatures unite and create the Dominion Medical Board. We are, therefore, on the horns of a legal dilemma, and in order to extricate ourselves are forced to resort to the most extraordinary round-about legislation. It is alleged that under Section 91 of the British North America Act the Dominion Parliament has power to "make laws for the peace, order and good government of Canada in relation to all matters not coming within the classes of subjects by this Act assigned exclusively to the legislatures of the Province." Under this clause it is proposed to create a Dominion Medical Board, and such legislation is alleged to be constitutional, possessing all the elements of permanence, but two essential pre-requisites are necessary before this bill can become law and be operative. One is to secure the consent of the Provincial licensing bodies, and the other is to secure such local legislation as will enable the local councils to legally register the Dominion qualification. Now, let us suppose that the consent of these bodies has been secured and the necessary local legislation obtained. The possessor of the Dominion qualification must register before the local Council of the Province, paying the usual fee were the parties to practise. Should he desire at any future time to locate in another Province, registration must again take place. In other words his Dominion qualification entitles him to interprovincial endorsement.

This complex, elaborate structure of Dominion registration may fall to pieces at any moment when any of the contracting provinces wishes to secede from the bargain. A province with grievances—real or imaginary—by its withdrawal in a moment of petulant irritability, may shatter the Dominion Medical Board and cause its complete disintegration. This is one of the weak points of Dr. Roddick's bill.

Manitoba and Quebec had reciprocal registration, when Quebec

without a single day's notice withdrew, and reciprocity ended. Dr. Roddick states that this weak point can be safeguarded by making secession difficult, intricate and expensive, by forcing the aggrieved province to appeal to the Supreme Court of Canada, or to a Court of Arbitration appointed by the Council.

REPRESENTATION ON THE COUNCIL.

Adequate representation of the general profession in the various provinces, of the medical colleges and of the universities, implies a large, extensive and unwieldy Council. Still, all these elements should be represented. Under section 6, sub-section 21, Dr. Roddick's bill reads: "The Council is to be composed of three members from each province: Ontario, 3; Quebec, 3; Nova Scotia, 3; Manitoba, 3; New Brunswick, 3; British Columbia, 3; North-west Territories, 3; Prince Edward Island, 3; Homeopathics, 3. Total, 27." If provincial representation be according to population, then this large number is further augmented. Let me here cull an extract from a circular letter addressed to our registrar, Dr. Gray, by Dr. Roddick. Dr. Roddick says by way of suggestion, "The President of each Council shall be *ex officio* a member. The Governor-General-in-Council shall appoint one for each province and the Territories; then the first 100 or fraction of 100 medical practitioners in each province should be entitled to one representative; that the second 100 or fraction thereof over 50 per cent. shall be entitled to one representative, and for every 600 over that, one representative shall be allowed." This will give you four representatives in the Council for Manitoba. If university representation on the Council be added, and also a representative of the medical colleges, the whole number of members would be at least forty-eight. The General Council of Great Britain and Ireland consisted of twenty-four persons for many years. At the present date there are thirty, the increase being caused by the representation of the general profession. In the Council of Ontario there are thirty members.

There are two serious objections to Dr. Roddick's bill:

1. The great number of the representatives of the Council entailing expenses beyond, at least, our immediate resources.

2. The fact that one of the contracting parties to Dominion registration may secede, and the elaborate fabric, the work of many years, tumble to the ground. This is the most serious and fundamental defect. Will an expensive legal procedure prevent secession and disintegration? When these problems have been solved, then and not till then is Dominion registration in sight.

ORTHOPEDIC TREATMENT OF DEFORMITIES AND DISABILITIES RESULTING FROM DISEASES OF THE NERVOUS SYSTEM—SPECIAL REFERENCE TO TENDON TRANSPOSITION.*

BY B. E. MCKENZIE, B.A., M.D., TORONTO.

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On reviewing the cases that have presented themselves for orthopedic treatment in the last thirteen years, I find that nearly 20 per cent. of all patients seeking advice do so because locomotion and symmetry are interfered with by deformity or disability arising from some affection of the nervous system. The proportion is about equal to that of cases arising from bone or joint disease, but smaller than that due to congenital deformities or defects.

Of the various nervous affections, acute anterior poliomyelitis is much the most common in producing the conditions for which alleviation is sought. The affection is marked by atrophy of the muscles involved, by altered electrical reactions, diminution or loss of the reflexes, and by a peculiar distribution of the paralysis according to function, rather than anatomy. This last feature is an interesting one, and has an important bearing, as will be seen, upon the treatment of these cases.

JOINT EQUILIBRIUM.

The normal condition of a joint implies that the muscles exercising control shall be able to maintain a balance. If at the knee the quadriceps femoris be reduced in power or completely paralyzed, its antagonistic group, the hamstrings, will so disturb the balance as to make flexion easy and habitual, while complete extension will be difficult or impossible. Under these circumstances the condition of flexion soon becomes permanent and contracture of the hamstrings results, so that we have a fixed deformity. (It is important to note that the word "contracture" here used is meant to imply a permanently shortened condition of the muscle.) It is seldom, relatively, that any muscle or group of muscles thus affected is completely paralyzed. There is generally some degree of power left, and quite frequently the muscle is only slightly disabled. These effects, also, as will be seen, have an important bearing upon the treatment.

If the peronei muscles be partially or completely paralyzed, those muscles passing to the inner border of the foot draw it in-

* Read at the meeting of the Canadian Medical Association, at Winnipeg, August 28th to 31st, 1901.

ward and deformity is gradually produced; or if the anterior leg muscles be partially or completely disabled through paralysis, then the back group, acting through the tendo Achillis, gradually bring about a condition in which the heel is kept drawn up and the anterior portion of the foot is pointed downward, a condition known as talipes equinus. If the quadriceps extensor of the thigh be disabled, the hamstrings tend to produce permanent flexion at the knee; if the glutei have less than normal power, the flexors of the thigh will tend toward its permanent flexion upon the pelvis, and in a similar manner through disablement of other groups of muscles various other deformities and disabilities may be caused.

MECHANICAL TREATMENT.

Until comparatively recent years, the only aid given to these patients was afforded through the use of appliances, generally consisting of steel braces strapped about the legs and attached to the boots. Both in books and in practice even at the present time this method of dealing with weakened limbs is far too common.

The constant use of braces and straps tends to prevent a development which might otherwise be induced. While the use of braces cannot be given up in all cases, yet it may be said that their employment has been quite too general. They may be frequently employed with advantage, especially at night when the patient is in bed. It is then that the part is allowed to assume the position of deformity, the knee to be continuously flexed and the hamstrings are permitted to become contracted, or the anterior part of the foot is allowed to drop downward and the tendo Achillis to become permanently shortened. The wearing of a simple night-brace that will hold the leg or foot in position during the hours of recumbency, is much less objectionable than it would be when the patient is moving about. It does not prevent development of muscle, it is not seen by the public, and its inconvenience is reduced to a minimum.

SOME PECULIARITIES OF INFANTILE PARALYSIS.

There are some peculiarities of acute anterior poliomyelitis which will bear special study because they afford indications for its rational treatment.

The paralysis is not general, but local. Mary Putnam-Jacobi, in Pepper's "System of Medicine," shows that in thirty-seven cases the paralysis was distributed as follows: Left lower extremity in thirty-four cases; right lower extremity forty times; right upper extremity and left lower extremity twenty-three times; all four extremities seven times; both upper extremities three times; both lower extremities twenty-three times; left upper and lower extremity twice; right upper and lower extremity once;

right upper and left lower extremity three times; muscles of trunk and abdomen once.

It will be noticed that the lower extremities are much more frequently involved than the upper. Here is a feature of the disease specially worthy of consideration in view of treatment. The difference of function between the upper and the lower extremity is marked. In order that the hand and arm may be of service, it is necessary that the fingers should be capable of considerable dexterity. They need the deftness which can finger a musical instrument, tie a knot, grasp a handle, hold and use a needle, etc. The upper extremity, which cannot approach in delicateness of function to this ideal, falls proportionately below its requirements. The lower extremity, on the other hand, serves comparatively well its purpose if only it can be a secure and substantial post to bear the body weight. The further it can go beyond this in adding to the activity of the individual the better. The comparative coarseness of function of the lower extremity, however, makes it much more amenable to treatment in the manner which is to be indicated in this paper than is the upper extremity.

It is further noticeable that the paralysis, even in a single extremity, is not general, but is limited to muscles functionally related. In the upper extremity the supinator longus generally escapes in spite of the fact that all the extensor muscles of the forearm are paralyzed, and though these are supplied by the same nerve; in the lower the sartorius generally escapes, though the quadriceps femoris be greatly disabled. On the other hand, the supinator longus is generally affected along with the deltoid, biceps, and brachialis anticus, with which it is functionally associated. The tibialis anticus is generally paralyzed in connection with the quadriceps extensor. These muscles are supplied by different nerves, but are associated in extension movements of the leg in walking.

In the lower extremity the peronei muscles situated at the outer border of the leg and foot, and employed to move the foot outward, are most frequently affected. Next in frequency is the posterior tibial and then the anterior thigh muscles, and least frequently the posterior thigh muscles. Rarely an entire extremity or a large group of muscles may be permanently paralyzed, but the paralysis is sometimes restricted to a single muscle.

The definitely localized paralysis and atrophy point to the importance of massage and electricity being applied early to stimulate the nutrition of the affected muscles. If contracture has been allowed to occur, section of the tendons of the contracted muscles and immediate replacement of the deformed member are indicated. Such replacement must be followed by the use of mechanical means to prevent recurrence, and under such circumstances results which are most gratifying are frequently obtained.

A further study of the mechanical conditions present affords a basis for a novel and bold, but quite a rational and effective, method of treatment. The conditions of the foot when the calf muscles are paralyzed and the peronei escape, will serve to explain the method of treatment here referred to.

MUSCLE TRANSPOSITION.

The muscles causing movement at the joint should maintain an even balance among themselves, but in the case where the calf muscles are paralyzed and the peronei active the heel will drop down, the outer border of the foot raised up, and the foot drawn outward.

No surgical intervention can add to the sum total of the power manifested by the muscles producing movement at the ankle, but a readjustment may be made so as to establish a more even balance. The effect of the peronei when unopposed is positively harmful and if nothing better can be done their tendons should be cut so as to permit correction of the deformity. This procedure would further lessen the sum of power possessed by the muscles at the ankle; hence a transposition of the peronei is made. The tendo Achillis having been freely exposed, and the peronei tendons having been cut subcutaneously in front of and below the external malleolus, these latter are reached at a point where they are nearest to the incision made over the tendo Achillis and are drawn from their sheath. The proximal segments of the peronei tendons are now inserted into the tendo Achillis as close as possible to the os calcis. It is generally advisable to shorten the tendo Achillis before the peronei tendons are sutured as here advised. If each of the peronei tendons have its proximal segment split, it can be introduced in a fork-like manner along with the split portions of the tendo Achillis, so as to make a very strong union. In suturing these parts together the posterior extremity of the os calcis should be pushed as high up as possible and the peronei tendons should be drawn down so as to make the distance between the origin of the peronei and the new insertion as short as possible. The union which takes place under such circumstances is nearly always without failure or defect. Circumstances permitted the cutting down upon such grafted tendons a few months ago when the splicing was found to be most complete, a strong union having been formed at the point where the tendons had been sutured together.

When the healing is complete, it will be noticed that the power of the active unparalyzed peronei, which before were harmful in their action, is transposed so as to permit them to pull upward at the insertion of the tendo Achillis. Thus, without lessening the sum total of power manifested at the joint, its action has been so rearranged as to establish a better balance of the foot, and to

change its position so as to bring it more directly and effectively under the body weight, thereby improving its function.

HISTORY OF CASES.

In a similar way numerous other transpositions may be made with signal advantage to the usefulness of the affected extremity. I shall report briefly a few cases to illustrate some of the many varieties of transposition which may be made.

CASE 1.—December, 1892. H. B., a boy, aged 11; infantile paralysis; history incomplete; lame from childhood, but not from the time when he first learned to walk. Both legs affected; right leg, in all its parts, is smaller and weaker than the left, but the paresis is more marked in the internal and extensor muscles of the foot. The gastrocnemius, soleus, and posterior tibial muscles are powerless. The flexor longus digitorum, the flexor longus hallucis, the tibialis anticus, and peronei are active. The latter muscles are displaced one inch forward from their natural position behind the external malleolus.

Operation.—An incision was made extending three inches directly over the tendo Achillis, which was found to be a firm fibrous cord about the size of a lead pencil. The tendon was split, the incision being continued down to the os calcis. The tendons of the peronei were cut subcutaneously, and the proximal segments having been drawn from their sheaths, were stitched into the tendo Achillis as close as possible to the insertion into the os calcis. The tendon of the flexor longus digitorum was reached by dissection from the first incision, cut and sutured with the peronei. Healing was satisfactory, and three months afterward walking was much improved. He has increased power of raising the heel, though not sufficient to enable him to sustain his weight by raising the heel from the floor and balancing upon the anterior part of the foot. A properly constructed boot was made supporting the inner border of the foot. He wears no brace, and walks much better than formerly.

CASE 2.—R. M., aged 14; had a severe attack of anterior poliomyelitis in infancy, greatly disabling both extremities. The right foot was drawn into strongly marked valgus, as shown in Fig. 1. The quadriceps extensor of the left side was so completely disabled as to make it necessary to place his hand on his knee in walking. Otherwise the knee would become flexed and the body weight coming upon the limb cause him to fall. Various other groups of muscles were so affected as to make it impossible for him to walk more than a couple of blocks at a time, the disability increasing as his age and weight increased.

Feb. 21st, 1901, the scaphoid of the right foot was removed, the cartilages of the head of the astragalus and of the cuneiform bones were completely cut away so as to leave a fresh bleeding

surface of bone. The gap was closed up by adducting the anterior portion of the foot, and the freshly-cut surfaces were brought into intimate contact, purposing to obtain a synostosis.

The tibialis posticus being completely paralyzed, and the extensor hallucis being left unaffected, and acting with such vigor that it dislocated the great toe dorsalward when an effort was made to dorsiflex the foot, the tendon of the former muscle was cut by an open incision two inches above the tip of the internal malleolus, and the distal segment of the tendon, being pulled from its sheath, was carried up in front of the malleolus and sutured into the split tendon of the extensor hallucis. The result in improving the position of the foot may be seen in Figs. 1 and 2. The result in improved function is just as satisfactory as the improvement in appearance. The strong extensor which before was able to dislocate the toe upward can do so no longer because



(Fig. 1.)

R. M.—Flat foot from infantile paralysis.



(Fig. 2.)

R. M.—Showing result of operation.

its force is expended partly in adducting the foot and raising its inner border.

May 2nd. In the same patient, who was obliged to place his hand on his knee in walking because of the disability of the quadriceps extensor to maintain extension, the sartorius was cut from its insertion and sutured in just above the patella. An incision five inches long was made midway between the patella and the tendon of the sartorius. The sartorius being found an active muscle, but inefficient, because of its insertion, to accomplish the work that is most needful for such a patient, it was cut near the insertion. The end of its proximal segment was drawn through a slit made in the fibrous structure just above the patella. The leg was kept fully extended for several weeks until healing had occurred. This patient was allowed to return home in five weeks, after the last operation, able to walk further and with greater ease than formerly, he does not find it necessary to place the hand

on the knee, and he can propel his bicycle with much greater force than he could before the operation. Time, development, and education of these muscles in their new role will greatly improve their efficiency.

CASE 3.—September, 1899. C. M., aged 18. Left talipes valgus paralyticus. The extensor proprius pollicis and the peronei were found active, while both tibiales were greatly disabled. In this case the tendon of the extensor pollicis was cut, and the proximal portion transposed to that of the tibialis anticus and the proximal segments of the peronei were carried in front of the tendo Achillis and grafted into the tibialis posticus. The result was a very marked improvement.

CASE 4.—H. C., aged 18, has right pes equino-cavus and loss of power of extension of the left knee from anterior poliomyelitis. This young woman walked with crutches constantly, except to move about in the house, which she could do by placing her hand upon the knee to prevent its giving way under her. The disability was increasing as her age and weight increased, and she had gradually become more dependent upon her crutches.

January, 1899, the sartorius was transposed as in Case 2 with a most gratifying result.

Enough cases have been related to illustrate this method of dealing with disabled and deformed extremities in such cases as are due to lack of balance in the muscles which control the foot and knee. It is a most satisfactory method of dealing with such affections of the lower extremity, but less helpful in the similar conditions which are found much less commonly in the upper.

CASE 5.—One case may be related to show what is the practice at the wrist. January 2, 1900. M. A., aged 33, had hemiplegia when 19 years of age; has flexion at the wrist with contracture of the anterior muscles and tendons, and extreme pronation. The proximal segment of the flexor carpi ulnaris was carried around the ulnar border and grafted into the extensor carpi ulnaris, and the flexor carpi radialis was in a similar manner carried around the radial border and grafted into the extensor carpi radialis longior. Several bands of fascia and of carpal ligaments were divided subcutaneously and the hand dressed in a position of supination and extension. Healing was satisfactory, and there is some improvement in the use of the hand, arising largely from the fact that the wrist is no longer kept flexed, but remains in about a medial position. There is also greater readiness in letting go of an object on which the fingers have fastened. It is possible that greater gain might have resulted in this case if the tendons had been carried more directly to their point of action by putting the tendons through between the bones. There is also another step in the operation which might have been taken with benefit, namely, the pronator radii teres might have been cut from its ordinary inser-

tion at the outer border of the radius and so transplanted as to pass between the radius and ulna to the same insertion at the tubercle of that bone. Much less opportunity has presented itself for operating upon the upper extremities, but so far as our observation goes the results are less satisfactory, not because the transposition could not be so well made, but because the requirements of the hand are so very different from those of the foot. Even in the hand and arm, however, much good may be effected by judicious tendon operations.

Before deciding what tendons to transpose and where to insert them, each case should be studied carefully with a view to determining exactly the effect produced by the action of each muscle both at its original and its new insertion. Either the distal segment of the tendon of a paralyzed muscle may be grafted into the uncut tendon of one that is active, as in case illustrated; or the proximal segment of an active muscle may be transferred to the tendon of one that is paralyzed, as in Case 3. There are some who advocate doing the former as frequently as possible and avoiding the latter, deeming it inadvisable to run the risk implied in cutting the tendon of an active muscle. It should be noted, however, that such active muscle is not an efficient one. On the other hand, it would often be better to cut the tendon, even if it were only possible to destroy its action thereby, as in the case of the peronei when unopposed drawing the foot into a position of extreme valgus, or when the tibiales unopposed draw the foot into extreme varus and supination. After operating in both ways upon many cases since December, 1892, I do not regard the distinction as important.

If good judgment be exercised in the transposition made and care be taken in the operation, the success of the grafting is certain and always attended with improvement in function. The operation was first performed in 1882 by Nicoladoni and described in the Archives of Clinical Surgery of the same year. But little attention was paid to it, however, till Parish of New York employed the same principle in 1892, and described it in the *New York Medical Journal* of the same year. In recent years it has come rapidly into favor with orthopedic surgeons as a most valued means for improving the condition of many who suffer from paralytic disabilities.

Other methods of treatment employed are much more widely known, and call for only a brief notice.

Mechanical means must often be employed because the disability is so great that the limb could not otherwise bear the body weight; but it should be carefully borne in mind that the use of braces retards the development of the extremity, and is therefore contraindicated if the limb can be kept in position and can perform its function fairly without aid. If the knee or ankle be so com-

pletely paralyzed as to be fairly described as the flail joint, then the subject of excision for the purpose of securing ankylosis should be considered. A leg without motion at either one or the other of its joints is much more serviceable than one that is extremely weak. Amputation because of paralysis should seldom or never be practised, even in the most completely disabled lower extremity. The limb can better be employed as a core for a good mechanical appliance than can its place be taken by an artificial limb.

One important condition, and one often overlooked, is that of deformity arising from paralysis. Where this exists it is, in most instances, the surgeon's first duty to correct the deformity. In many cases the contractures resulting from the paralysis are insuperable obstacles in the way of progress, and it is not uncommon to find both children and adults unable to walk whose trouble is not due chiefly to the paralysis, but to the secondary deformity. One girl, four years of age, having spastic paralysis, the adductors being strongly affected, had never learned to walk because she could not carry one knee past the other. There were other troubles in the same child, namely, strongly marked flexion at the knees through contracture of the hamstrings and some deformity of the feet. Within three months of the time when all these contractures and deformities were overcome, so that the knees and feet could be kept in a correct position and the knees be fully extended, and the legs abducted so as to make with each other an angle of 60 degrees, the child was able to walk about the house from one room to another.

Because of multiple neuritis following typhoid fever in a young woman of nineteen, and because of the deformity of feet and flexion of the knees resulting from contracture of hamstrings and calf muscles, she had not walked for nearly eighteen months. Rectification of the deformity was easily accomplished, and when followed up by physical training, including massage, her recovery was speedy and satisfactory. Without first getting rid of her deformities the power to walk could not have been restored.

Of other forms of disease of the nervous system concerning which advice is sought because the power of locomotion is defective, spastic paralysis is the most common. Section of the tendons of the muscles most affected, and pulling widely apart of the cut ends and their continued separation until healing has occurred, results in much benefit. A most important element in prognosis is found in making an accurate estimate of the patient's mental condition. More than half of these patients suffering from spastic paralysis are below par mentally. The better the mentality the more hopeful the prognosis.

Even cases of locomotor ataxia, pseudo-hypertrophic paralysis, and obscure forms of progressive muscular atrophy, seek advice

because of defects of locomotion. It is only in rare instances and in limited measure that orthopedic surgery affords them any help.

On the other hand, neurotic patients frequently seek advice because of supposed disability of spine and of other joints. They are a class deserving of much judicious sympathy and are very amenable to treatment. A regularly constituted and well-equipped gymnasium is a powerful aid in the successful management of these patients.

Permit me to summarize:

1. Many patients who seek the advice of the orthopedic surgeon are suffering from some form of nervous affection—usually chronic.

2. When deformity exists it should be corrected.

3. When there is lack of balance at a joint an effort should be made to restore equilibrium.

4. Tendon transposition is an effective means to secure this end in selected cases.

5. Braces and splints should not be employed except in meeting the clearest indications.

6. Mechanical means wisely employed may do much to supplement the defective lower extremity.

7. Arthrodesis of a "flail" joint is often better than mechanical aid.

8. Amputation of a limb because of paralytic disability should seldom or never be performed.

9. The gymnasium is a powerful means of enforcing the discipline which is essential to successful treatment of so many neuroses.

NOSE AND THROAT IN GENERAL PRACTICE.*

BY JOHN HUNTER, M.D., TORONTO.

It may be impossible to estimate with any degree of accuracy the percentage of cases met with in general practice that are complicated by morbid conditions in the nose and throat. In regard to such complications two facts are in evidence: (1) the percentage is quite high, and (2) the general practitioner, as a rule, does not unduly worry himself about them. How many physicians who are experts in diagnosing morbid conditions of cerebral, pulmonary, abdominal, or genito-urinary origin, look upon pathological manifestations in the nose and throat with merely a sentimental curiosity? It is not any part of the purport of this paper to undervalue in the least the splendid achievements of the general practitioner, but to try and enlist more interest in one of the most important, but hitherto most neglected, portions of his domains.

When I saw the list of subjects to be presented at this meeting of the Canadian Medical Association, and the standing of those who were to read the papers; when I knew with what zest the members of this Association would enter into the discussion of the subjects presented, inspired not only by the merits of these, but also by the bracing atmosphere of this beautiful city of Winnipeg, the political, commercial, and literary metropolis of one of the largest and richest expanses of country on this or any other continent,—under such circumstances, Mr. President, I thought any good cause would attract attention.

I do not purpose confining this paper to any special phase of nose and throat work, but rather endeavor to imitate the example of the early pioneers of our older provinces who, on wending their way through the primeval forests, “blazed” a tree here and there, not only to mark out the path for their followers, but also to inspire these with a sense of the vastness of the country through which they were travelling.

My subject, like most orthodox ones, may be considered under three heads: (1) anatomy and functions; (2) abnormal and pathological conditions; (3) principles of treatment.

The anatomical landmarks of the nose and throat will be briefly summarized: Deformities, either congenital or arising from traumatism, of that portion of the nose constituting such a special feature of the face, will be passed over, as these belong to general surgery. At the entrance of each nasal passage there is an oval-shaped opening leading into the vestibule. The walls of

* Read at Canadian Medical Association Meeting, Winnipeg, August, 1901.

this chamber are formed by cartilage, and from the inner surface project a series of short, firm hairs (vibrissæ), whose function is to arrest the coarser particles floating in the air. There is a well-defined cartilaginous rim forming the upper and outer part of the archway between the vestibule and the nasal cavity. In the normal nasal fossa, the inner wall is formed by the smooth, reddish-colored perpendicular surface of the septum, but owing to the difference in the character of the tissues, and modes of development of the three structures—triangular cartilage, vomer, and perpendicular plate of the ethmoid—entering into the formation of the septum, many irregularities are found. These are known as deflections, curves, and spurs of the septum. When the roof of the mouth is much arched, the floor of the nasal fossa is displaced upward, thus lessening the nasal space, and obstructing its functions. The cribriform plate of the ethmoid constitutes the roof. The most interesting feature of the nasal cavity, especially from a pathological point of view, are the three scroll-like processes of bone known as the superior, middle and inferior turbinated bones. The inferior and middle ones run somewhat horizontally from before backward, and can be seen quite distinctly. The size and color of their posterior extremities are of great clinical importance. These conditions have to be ascertained by the aid of a laryngeal mirror. The porous character of these bones, together with the large amount of erectile tissue in the thick layer of elastic mucous membrane surrounding them, make them veritable reservoirs for storing blood, hence their great vulnerability to disease.

The mucous membrane of the nares varies in thickness. It is chiefly lined with ciliated columnar epithelium, and in it are embedded a large number of serous and mucous glands. It performs an exceedingly important function, viz., to purify, disinfect, moisten and warm all the inspired air. This is accomplished by the air coming in contact with the walls of the nares, which are rendered warm and moist by the abundant secretion of serum, and somewhat tenacious by the presence of mucus. When the inspired air contains, as it generally does, myriads of bacteria, very few of these escape destruction, on their passage through the nasal chambers. The filaments of the olfactory nerve are distributed in the vault of this cavity. The choanæ or posterior orifices of the nares, open into the naso-pharynx. The presence of the pharyngeal tonsil and the orifices of the eustachian tubes give special clinical interest to this space. Hypertrophy of this glandular mass, known as "adenoids," gives rise to very grave features, which will be referred to later. The tubal orifices open up direct communication with the middle ear.

The functions of the pharynx may be considerably impaired by hypertrophy of the faucial tonsils, as well as of the glandular masses situated at the base of the tongue—lingual tonsils. The

superficial vessels of the lingual tonsils are often varicose, and slight hemorrhages from this source may give rise to a suspicion of a pulmonary lesion.

The larynx presents intensely interesting anatomical, functional and clinical phenomena. Its functions give to man an immeasurable pre-eminence over every other form of animal life.

Beginning from below, we have the ring-shaped cricoid cartilage. This is firmly attached to the upper edge of the trachea, and thus becomes the foundation of the structures above. Articulating on its upper edge are the pitcher-shaped arytenoid cartilages. Each arytenoid has a posterior or muscular projection, and an anterior or vocal one. Muscles acting on the former as a lever separate or approximate the delicate pearly-white bands—the vocal cords attached to the latter. The movements of the vocal cords give rise to that characteristic in voice production technically known as pitch. The functions of the cords in association with those of the resonance chambers of the pharynx, nose and mouth, give expression to all those shades of pitch and tone so charming in eloquence, so alluring in love, and so enrapturing in song.

The mission of the crisp little leaf-shaped epiglottis, like that of the gates of paradise, is to prevent the entrance of anything objectionable into the aerial regions beyond.

There are several accessory cavities in communication with the nares. These are the maxillary, frontal, ethmoidal, and sphenoidal sinuses. The mucous membrane extends from the nose into these, hence their liability to become involved in infectious diseases.

Passing now to the second division, viz., abnormal and pathological conditions, the abnormal conditions most frequently met with are those of congenital origin, *e.g.*, cleft palate, or those due to irregular development. Some are the result of traumatism in early life.

The anatomical characteristics of the structures in the nose and throat, as well as their functions, naturally suggest the nature of the pathological phenomena to be found in these regions of the respiratory tract. The delicate vascular tissues are often suddenly exposed to the influence of extremes of heat and cold, exposed to every conceivable irritating element that can float in air, and subject to attack from countless myriads of infectious bacteria. In the variety of tissues, too, is to be found suitable soil for the growth of many morbid products, benign or malignant.

We can readily understand why hyperemic, congestive or inflammatory processes—acute, subacute, or chronic—should be not only the most frequent pathological manifestations, but also the most frequent sources of functional disturbance. About the first local evidences of disease in these portions of the respiratory tract are the suppression or diminution of the secretion of serum,

and swelling of the soft tissues. These are the initial processes in "colds," rhinitis, or nasal catarrh or laryngitis. After a period of twelve or twenty-four hours, a second stage is ushered in by a profuse secretion of serum and mucus, and by an exudate of lymph and pus cells. The proportion in which these elements are mixed gives to the discharge its clinical features. The further progress of the disease depends on several factors, *e.g.*, continuance of the exciting cause, and resisting powers of the tissues, the latter depending very largely on the condition of general health. The term subacute or chronic nasal catarrh, is applied to those cases in which the morbid discharge continues indefinitely. When the exciting cause is a specific micro-organism, as in syphilis or tuberculosis, we have in addition to the above, special pathological manifestations, such as mucous patch, ulcer, and tubercle.

Under certain conditions the mucous membrane of the nares may atrophy, the secretions diminish and become very tenacious and hard to dislodge, hence they may decompose and give rise to the horrible odor of ozena.

In addition to the diseases already mentioned, the functions and proper drainage of the nasal passages may be impaired by the presence of hypertrophied turbinates, deflections, and spurs of the septum, polypoid and other tumors.

Passing to the naso-pharynx, we find very grave conditions arising out of hypertrophy of the pharyngeal tonsil. The morbid phenomena due to the presence of adenoids in the vault of the pharynx, should challenge the prompt attention of the physician, in order that these may be removed. The clinical features caused by obstruction from adenoids, are mouth-breathing, a peculiar, listless expression of face, mental dullness, impaired voice production and articulation, deafness, reflex cough, and deformity of chest.

The ready entrance of infectious germs into the eustachian tubes makes affections of the middle ear very frequent complications in disease of the naso-pharynx.

Hypertrophy of the faucial and lingual tonsils present many of the clinical features already referred to in describing the lesions in the naso-pharynx.

The structures of the larynx are vulnerable to similar morbid conditions to those found in the nares. The clinical features are acute, subacute, and chronic laryngitis, and the presence of ulcers, tubercles, or tumors. The implication of the vocal cords impairs voice-production. The especial danger in intra-laryngeal disease is obstruction to the free passage of air through the narrow chink of the glottis.

Principles of Treatment.—In regard to treatment, the physician will be successful or otherwise, just in proportion to the importance he attaches to this part of his work. Why a physician

should be more expert in the use of the stethoscope than in that of the laryngoscope is a problem rather difficult to solve. In personal discomfort, many diseases of the nose and throat are at least the "peers" of any pulmonary or cardiac ones, and in point of gravity, laryngeal and nasal diphtheria and tuberculosis stand in the front ranks of malignant diseases. When we consider, too, that every breath of air we inhale is liable to be contaminated with a few, or it may be myriads, of pathological bacteria—that, under normal conditions, are destroyed in their passage through the nares—we can imagine something of the danger to which the lungs are exposed when disease has destroyed the germicidal powers of the mucous membrane of the nares, and countless myriads of these bacteria are allowed free access to the delicate tissues of the air-cells; under such circumstances does it seem unfair to say that the physician who ignores morbid conditions in the nose and throat is any less culpable than the commander of a besieged city who leaves the main entrance unguarded?

Here, as in every other department of the physician's work, prevention, in the parlance of the mining camp, pre-empts the first claim. Every orthodox law laid down by sanitary science in regard to abundance of sunshine and pure air, personal cleanliness, wholesome food, proper clothing, work, exercise, diversion, rest, should be most religiously lived up to, and every moral law, anathematizing all excesses in eating, drinking, and in the grosser sensualities conscientiously observed. I would like to suggest, *en passant*, that some special instruction in regard to the respiratory functions, and the use and abuse of the voice, would be a valuable addition to the curriculum of our schools and colleges.

The duties that should engage the attention of the physician are (1) to secure the unobstructed passage to and fro of an abundant supply of air, and (2) to establish free drainage for all morbid discharges. These two objects are, as far as possible, to be accomplished by straightening deflections of the septum, removing spurs, osseous and other forms of tumors, and by reducing or removing hypertrophied tissues. Strong objections are sometimes urged against the removal of hypertrophied tonsils, on the ground that they become smaller as maturity approaches. These tissues may atrophy, but the chest deformities, deafness, mental habitude, and other morbid habits they beget live after them. Enlarged tonsils are positive evils, and as they can be very safely removed, the surgeon's duty is very plain, and especially in regard to adenoids in the naso-pharynx, a very imperative one, viz., to remove them.

When a patient presents himself for treatment, i.e., for a cold, rhinitis, acute, subacute, or chronic nasal, pharyngeal or laryngeal trouble, the general practitioner should investigate carefully his vocation, habits, and state of general health. The specialist should always refer such patients back to the general practitioner

for a bill of health. No system of local treatment can be carried out successfully without a due appreciation of every other morbid condition that may be present.

The aim of all local treatment should be the removal of any morbid discharges and the complete restoration of the normal functions. The means used to accomplish these purposes are the use of the spray, douche, and inhalations. The remedies to be used are detergents, antiseptics, stimulants, and anodynes. In prescribing mixtures for the spray or douche, the delicate and sensitive character of the mucous membrane and glandular structures must be most carefully considered. The ingredients should be mixed in such proportions as to give the solution such a density as not to be too readily absorbed by the mucous membrane, producing a very stuffy, disagreeable sensation following the use of the spray or douche, or on the other hand so strong as to act as an irritant, *e.g.*, with salines such as boric acid, sulpho-carbolate of soda, etc.; four to twelve or twenty grains to the ounce may be used. In standard text-books, such as Price-Brown's, Lennox Browne's, Bishop's or Kyle's, elaborate series of very efficient formulæ are given. No general practitioner should be without some one or more of these authors.

Before giving a patient the douche to use, he must be taught how to use it properly. There must be a free exit for the return current, the mouth kept open, and no attempt made to swallow or cough whilst the fluid is passing through the naso-pharyngeal space, otherwise infectious matter may be very readily carried into the eustachian tubes, and, as a result of this, violent inflammatory action set up in the middle ear.

Inhalations of hot, dry, moist or medicated air are very serviceable in many forms of nose and throat trouble. The heat has important therapeutic action on all the various tissues, and as the hot air penetrates everywhere, the diffusion of the remedies is very widespread.

In conclusion, a word or two on climatology. Now that physicians are beginning to more fully realize the value of open-air treatment, they can appreciate the importance of securing the most favorable climatic conditions for those affected with nose and throat trouble. Broadly speaking, in those cases where there is excessive discharge and the tissues infiltrated, a dry bracing atmosphere, like our North-West prairies, New Mexico, or Arizona, answers best. Where the tissues are irritable, reflexes exaggerated or the secretions diminished and thickened, an equable, warm, moist climate is preferable.

THE SANATORIUM TREATMENT OF TUBERCULOSIS.*

BY ARTHUR J. RICHER, M.D., MONTREAL,
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IN 1859, Brehmer, of Goerbersdorf, laid the foundation for the hygienic or institutional treatment of pulmonary tuberculosis, not, however, without meeting with some opposition from the Government of the Silesian province before the first sanatorium was constructed. The treatment as first conceived by him was most simple. He believed out-door life, exercise and a liberal diet were the essentials for the cure, but he also held the belief that the climate in the vicinity of Goerbersdorf was a specific one, being supposedly immune from the disease. Dettweiler, who had been a patient, and later assistant physician to Brehmer at Goerbersdorf, opened another sanatorium at Falkenstein in 1876.

Dettweiler held somewhat different views, and modified to some extent the treatment which had been originated by his teacher, recommending rest instead of exercise in the treatment of pulmonary tuberculosis. It is needless to say that these two pioneers had to face the harsh criticisms of the whole professional world for nearly twenty years before the medical men took up the subject and discussed it in a fair manner, as the prevailing opinion at that time rather pointed to the belief of incurability. Towards the end of the struggle these two phthisio-therapeutists had created a small school which soon added to its number of adherents, until now we find the field of phthisio-therapeutics an established department of medicine in every civilized portion of the globe.

The essentials of the sanatorium treatment as understood and practised at the present time by the phthisio-therapeutists the world over, may be summed up in the following terms: *Rest—Out-door Life—Over-feeding—Medical Supervision*. For the sake of convenience we shall consider each subdivision of the hygienic or sanatorium treatment separately in the order named.

Rest.—This should be an absolute term, understood as such by all serious-minded, well-intentioned medical men who are looking forward to the permanent recovery of their phthisical patients. In incipient cases *rest—absolute rest*—must be enjoined. A score of personal observations might be cited of patients giving promise of complete recovery, who have simply murdered themselves with the mild (?) exercise prescribed for them.

I have very little hesitation in making the statement that the time is not far distant when the term "rest" will mean the recumbent position as applied to the treatment of incipient pulmonary phthisis. I have kept patients in bed, in the open air, during the incipient stage of the disease for three, four and five

* Read at the Winnipeg Meeting of the Canadian Medical Association, August 1901.

weeks, at the outset of their treatment and always with most beneficial results

I recall one instance of a male patient gaining one pound in weight every day during a three weeks' stay in bed, and ultimately making a most perfect recovery in three and a half months.

The *rest cure* as practised at the present time is in a semi-reclining position in a steamer chair, or an adjustable invalid's chair, out of doors. The patient is made as comfortable as possible with the aid of cushions, rugs, etc., and in winter a hot soapstone is placed at the feet. Each sitting of two to three hours is interrupted by the ingestion of food, and a short walk of forty to fifty steps on the verandah.

The term "rest" should imply even more. A wound on any part of the body is set to rest by protective bandages. The wound in the lung should also be protected as much as is possible. Hilarious outbursts, loud and excessive talking, singing, forced expiration and inspiration, or any attempt at chest expansion, until there is evidence of arrested disease, are bound to be injurious. In a like manner emotional reading, sexual reflections, or indulgences however mild are to be avoided.

Smoking and the unwarranted use of intoxicants, as well as games of an exciting nature, should not be allowed. Anything that will increase the respirations or pulse rate is going to interfere with speedy recovery by irritating the wound which is attempting to heal by resolution.

Out-door Life.—In the summer time not less than ten hours, in the winter season not less than six hours, should be spent in the open air. In the Laurentian Mountains our patients put in an average out-door stay of twelve hours in the summer, and eight in the winter, inclusive of inclement weather.

Patients sleep with their bedroom windows open both summer and winter. During the extreme cold weather a hot soapstone is usually placed at the foot of the bed, thus keeping the feet and body warm with comfortable bed-clothing, while the head is kept quite cool, the patient constantly breathing fresh air, practically continuing his out-door life while sleeping.

Gradually accustoming your patients to this open-air method of living makes them extremely resistant to cold, and increases the power of food assimilation and metabolism.

The following summary of meteorological observations will give you some idea of what out-door life means in the Laurentian Mountains, where is situated the now well-known resort and Sanatorium of Ste. Agathe des Monts.

1900.

Min. Temp. January.	Max. Temp. July.	Mean Temp. Jan. July.		Days of Sunshine. June. Oct.		Rainfall. June. Oct.	
17°	82°	7.88°	62.98°	20	18	3.6 in.	1.13 in.

The fact that open-air life in favored resorts is not hindered by inclement weather, and the further well-known fact that the outdoor life is practically carried on throughout the night as well as the day, make the possibility of a similar treatment being advocated at a very moderate altitude anywhere, if one can only be assured of a plentiful supply of pure air. The very good results obtained in the Laurentian Mountains, where the elevation is quite moderate, varying from 1,200 to 1,700 feet above sea, should encourage every physician to seek suitable resorts as near the home of the patient as possible. We know from experience that the permanent cures are those obtained in home climates.

Over-feeding.—This does not necessarily mean "gavage" or "forced feeding." The average patient does not require these extreme measures, as the change to a suitable climate, with health-giving and restful surroundings, usually develops in the individual a voracious appetite. The northern altitudes particularly enhance food assimilation, and the winter season in northern climates is remarkably stimulating in this direction.

Food must be given at frequent intervals as digestion is much more rapid under this *régime* of life. Before rising the patient should be given some light liquid food or some fruit, hot milk, gruel, coffee and cream, etc., the choice being left to the physician, or guided by the desires of the patient. The patient is then allowed to rise and dress and take his regular breakfast an hour or so after the breakfast of awakening. The regular breakfast should be varied, but oatmeal or some other cereal food should be taken daily. Honey, hot rolls, cornmeal cakes, fish, either smoked or fresh, lamb cutlet or a small steak, eggs in any form, sometimes bacon, toast, coffee, milk, etc., should be varied and used at breakfast time.

Between breakfast and mid-day meal (which should be the heaviest meal of the day) a small luncheon should be taken consisting of biscuits and cocoa, Tropon chocolate or Tropon biscuits, cold milk with Somatose, one or two raw eggs, broth or beef tea with buttered bread, etc. This intervening lunch should be varied each day as much as possible, yet when patients can be made to ingest one, two or three raw eggs without producing nausea, it is preferable to keep on giving the eggs daily.

The mid-day meal should be taken at one o'clock, and should invariably begin with a rich consommé not too highly seasoned, in which one may add a small teaspoonful of Tropon or Somatose. This should be followed by a light entrée of fish, or some cold meats, or daintily made dishes, followed by roast meat, such as lamb, fowl, beef (underdone), etc., with large quantities of vegetables, such as cabbage, potatoes, lettuce, spinach, asparagus, green peas, etc. Desserts are not considered necessary, yet such a meal requires relieving dishes, so that ices, milk puddings, light cake, and preserved as well as fresh fruits may be partaken of. Fruit should at all seasons be made use of in the diet of a consumptive,

unless the condition of the bowels should be a contra-indication. Between the mid-day meal and supper, a light lunch, such as the one outlined for the forenoon, should be partaken of. The supper should not be a hearty meal—some hot or cold meat, bread and butter, with tea or milk, and some preserved fruit. Before retiring at nine o'clock, some hot milk or an egg-nog usually procures a restful night. The supervision of the cooking should not be neglected by the physician; in fact, the successful phthisio-therapist is the man who thoroughly understands the culinary art, and devotes a great part of his time to supervising the preparation of the food his patients are called upon to ingest. Quite often a patient will come to the conclusion that over-feeding, or stuffing as he calls it, is going to ruin his digestive organs. You must in such instances make use of your persuasive powers, and convince your patient that even if he should have no desire for food, his digestive organs will assimilate all he can ingest, even if he forces himself unto nausea. Impress upon him the fact that the digestive organs are more apt to become inactive if given but little to do, while the stomach itself possesses the indisputable privilege of relieving itself speedily when overloaded, which seldom happens.

If it becomes necessary to resort to forced feeding, the greatest firmness is required on the part of the physician, in order to confirm his earnestness in helping the patient in the battle for life. After the stomach tube has been used a few times, the patient usually realizes that he can ingest his food quite well without it, and he usually becomes the hero. Persuasion and firmness, however, usually render it unnecessary to resort to extreme measures.

A palatable combination of proteids and carbo-hydrates, with a small quantity of alcohol given between meals, will, in the majority of cases, favor the assimilation and storage of hydrocarbons contained in the usual diet.

Medical Supervision.—This is the key-note to success in the treatment of tuberculosis. It is this supervision which has carved the name of victory in the field of phthisio-therapy. It must, however, be constant. The physician must be the friend as well as the adviser of the consumptive. He must study the peculiarities of each patient, and individualize his treatment, if the *régime* may be called such. In appalling numbers the victims of this lack of supervision are to be found in open health resorts. To-day you may be called to attend an individual who has an exacerbation after having been for a long walk, a bicycle ride, a canoe or boat outing, either paddling or rowing; to-morrow you may be summoned to the bedside of a young mother, with an extension of her lung lesion through having had to sacrifice herself at the altar of devotion attending her child during an acute illness; the next day a young lady seeks your advice; she has had a slight rise of temperature following a prolonged drive, having returned home in an exhausted condition, and in the course of a few weeks a new

focus develops under your observation. How many instances one could recite of the fatality of this lack of medical supervision, which is nowhere else so absolutely necessary as in the treatment of pulmonary tuberculosis.

Medical Treatment.—Outside of a few symptomatic indications, drugs are seldom of any real value in the treatment of pulmonary phthisis; in fact, the patient who is made to follow hygieno-dietetic treatment exclusively is the one who improves most speedily. Where indicated, strychnine in doses of 1-30th of a grain has proved very useful. Creosote still remains the most reliable internal antiseptic in tuberculosis. It should, however, be used in the form of creosote water, nearly to saturation, and both the creosote and water must be strictly pure, as otherwise disastrous results are bound to follow its administration. The doses exhibited in creosote water may safely reach thirty drops three times a day, but should not be long continued. Recent hemoptysis, as you know, is a contra-indication to the use of creosote or any of its derivatives.

The fever of tuberculosis should invariably be treated by rest in bed. The use of antipyretics should not be encouraged. If antipyretics are used at all, the chosen one should be given from one-half to one hour preceding the time of the expected rise of temperature.

Cinnamic acid and cacodylate of soda, of which we have heard much lately, are not to be recommended.

One might enumerate by the dozen the different remedies which have been advocated for the treatment of phthisis. Let me tell you that very few of these have ever proved beneficial, while we have proof positive of the dangers of supermedication in the treatment of this disease.

The *cough* is usually controlled by the use of codeia, heroin or dionin. The *night sweats* usually disappear with increased nutrition. They can be controlled if necessary by the use of atropine (1-80 gr.) or camphoric acid (20 to 30 grs.).

The hemoptysis when profuse is always a dangerous complication. Absolute rest in bed in semi-reclining position must be enjoined. For twenty-four hours after a hemorrhage the movements of body, limbs or head must not be allowed; even whispering must be avoided by the patient. Ice packs to the chest, with a hypo of morphine sulph. $\frac{1}{4}$ -gr., and atropine 1-75 gr. in combination, will as a rule hasten the formation of the sealing clot.

According to the severity of the hemorrhages, rest in bed must be enjoined for some time, varying from two to fifteen days after the last trace of blood has disappeared from the sputum.

Conclusion.—We usually judge of the efficiency of any treatment according to the results such a treatment produces. Looking into the records of older institutions, such as Goerbersdorf and Falkenstein in Germany, giving a percentage of permanently arrested disease in over 60 per cent. of cases treated, and

also taking into consideration the very excellent results obtained at the Adirondack Cottage Sanatorium, with a percentage of over 70 per cent. of cures, we must come to the inevitable conclusion that the hygienic treatment has definitely established its superiority. I have quoted the two oldest institutions in Europe (over thirty years), and the oldest institution in America (over twenty years), as the results obtained during a long period are far more convincing. I do not wish to enumerate the different institutions in America which are now doing similarly good work, and obtaining results quite as good, as such would encroach upon your time.

Being favored by many ideal health resorts in different parts of the North American Continent, one cannot but ask why more sanatoriums are not in operation. The reason is to be found in the fact that the erection and maintenance of such institutions is largely a social problem, and the public has not yet been aroused to the needs of the population which is being decimated by this disease.

A most important factor in sanatorium treatment is the education given to the patient which will allow him to lead a more hygienic life at home, as well as graduating him as a teacher in the prevention of disease.

It is a well-known fact that when pulmonary tuberculosis becomes arrested, the disease cannot be considered as positively cured, unless good health has been enjoyed for at least eight years after the arrest of the disease. Thus the necessity of a practical hygienic education becomes imperative, and this can only be obtained by a sufficiently long stay in a supervised institution.

The time is not far distant, I hope, when every city in this Dominion will have its sanatorium at as short a distance as possible, with its rural probating as well as isolating home, in the immediate vicinity of its suburbs.

A TRIP AS SURGEON WITH THE NEWFOUNDLAND SEALING FLEET

BY WM. F. ADAMS, M.D., TORONTO.

THE spring of 1901 saw a new departure from old customs in this great industry. In the past, although over four thousand men and some twenty large steamers are engaged annually in the arduous and perilous occupation of "ice hunting" in the North Atlantic, yet no physician has been sent out with them to render professional services to the needy. The spirit of progress, however, is abroad in Newfoundland, and the opening of the new century has been marked by the sending out of six doctors this year, on board some of the larger vessels of the sealing fleet. This

was a tentative measure on the part of the vessel-owners, who had been urged thereto by Rev. Dr. Harvey and the late Governor of the Island, who pointed out to them very strongly the claims of humanity and the necessity of guarding the lives and bodies of the men who ran great risks in their interests.

Dr. T. G. Roddick, of Montreal, and Dr. E. Herbert Adams, of Toronto, took an interest in the matter, and as a result four of the six surgeons were from Toronto, and they will not soon forget the novel experiences of their trip to the ice, a trip which many others may be privileged to enjoy in the future, as the owners were well pleased with the results of the doctors' presence on their vessels, and have signified their willingness to engage physicians in the coming years.

When we consider the risks which are run on these annual trips to the ice, it is a matter of great surprise that the services of physicians have not been engaged before this, but the men are hardy and accustomed to facing danger in very many forms, and when accidents happened—well, it was too bad, but it could not be helped.

Not infrequently a vessel is lost, usually by being crushed in the ice, and then the men must walk across the ice, perhaps for days, before they reach the shore. Many a tale of terrible suffering could be told by these rugged fishermen of tramping over the frozen bosom of the deep, blind from its glare, without provision or shelter, and, worst of all, with a knowledge of the suffering that awaits that little family at home when the bread-winner returns with empty pockets. Yet it is surprising how few fatalities there are. The most serious catastrophe which has overtaken the sealers in many years was that of 1898, when the steamer *Greenland*, Capt. Geo. Barber, while jammed in the ice, was overtaken by a terrific storm. The men were out on the ice at the time, and in the blinding tempest could not find the vessel. Many, after enduring untold sufferings, reached the ship's side, but it was a sorrowful return, for they carried on board the frozen corpses of twenty-eight of their comrades, while twenty more were lying in an unknown resting-place, frozen in the ice and snow, or perchance had already found a grave in the great deep as the moving ice broke up and relinquished its grasp upon their mortal remains.

Such an accident is fortunately rare, but not uncommonly in fog or storm an odd man or two loses his life while ice-hunting. This year the fine vessel, *Hope*, was lost, but all the men were saved.

Should an epidemic break out, the results would be truly awful, for the men are compelled to huddle together in such close quarters that it is almost a matter of impossibility to keep the place in anything like a sanitary condition. Then, again, they have been left in ignorance of even the simplest laws of hygiene, and to this may be attributed the rapid increase in the number who are annu-

ally sacrificed to the great white plague. The presence of physicians on sealing vessels will do much to enlighten these sturdy toilers who, in striving to wrest a precarious livelihood from the treacherous deep, are placed in circumstances that prevent them attaining even a meagre rudimentary education.

The captain and officers, on seeing the doctor carefully dressing a finger-cut for one of the men, expressed the opinion that the men were making babies of themselves. Why should they not just pour on a little Friar's balsam, tie on a rag over the (very dirty) finger, and let it go? The results of such treatment in the past were very much in evidence among the men in the form of missing fingers. Septic arthritis ensued as the result of such treatment, the men had what they call a swoile finger (seal-finger). It became greatly swollen and, rather than lose the summer's work, and have only a stiff joint at the end of the suffering, he would submit to amputation. Many of the men, including the officers, had lost from one to four or five fingers in this manner.

The great drawback to Newfoundland is the lack of education among the people. It is a magnificent country, and like old England, this sea-girt isle produces men of prowess and physique. Their calling as fishermen brings them face to face with all the perils of the great deep. Inured to hardship and danger, they grow up brave in heart and sturdy in mind and body. They are loyal to their native land, and are content to fight bravely on through poverty and distress till the great interior of the country be opened up and the vast mineral wealth shall be placed upon the markets of the world, and Newfoundland, England's oldest colony, but oppressed and downtrodden by unfair legislation, shall rise out of the shadow and stand strong and fair and prosperous, the home of the brave and the free. Newfoundland offers attractions as a summer resort which compare favorably with any place in the world. She has been well named the Norway of America. The railway system operated by Newfoundland's millionaire, R. G. Reid, runs across the island, and numerous branch lines connect important places. Game of all kinds is to be found in the interior, and interesting trips may be taken upon the various steamers. The people are quaint and interesting, and the yarns which the old fishermen can spin arouse admiration for the simple, sturdy race and for the country which can produce such worthy sons of the old Anglo-Saxon heroes of Britain.

Proceedings of Societies.

CANADIAN MEDICAL ASSOCIATION.

THE 34th annual meeting of the Canadian Medical Association opened at Winnipeg, Manitoba, on the morning of August 28th and continued for the two following days. There were in attendance over 175 members from all parts of the Dominion, the second largest gathering in the history of the Association; but the meeting itself has been pronounced the most successful of any yet held under the auspices of this Association. There were several visiting doctors from the United States.

Dr. H. H. Chown, of Winnipeg, the President, occupied the chair, while Dr. F. N. G. Starr, of Toronto, discharged the duties of Secretary.

In the absence of Chief Justice Killam, Dr. J. H. O'Donnell, one of the oldest practitioners in the West, delivered the address of welcome. He referred to the conditions present in 1869, when Winnipeg was an outpost of civilization, and gave interesting references to Drs. Cowan, Curtis J. Bird, Dr. Beddom and Dr. Bund, who were already in the West when Dr. O'Donnell moved there in 1869. His address was very much appreciated by the members of the Association.

Dr. R. W. Powell, of Ottawa, the past President of the Association, then introduced Dr. H. H. Chown, the President-elect.

Dr. Chown, on rising to reply, was received with hearty cheers, testifying to the high esteem in which he is held by his fellow-practitioners throughout the Dominion. He briefly thanked the Association for the honor they had conferred upon him at the meeting in Ottawa one year ago.

Dr. Starr, the Secretary, presented his Annual Report. It referred to the meeting at Ottawa last year, to the attendance of 153 members, which was an increase over former meetings in that city, to Dominion Registration, and to the formation of a Physicians' Protective Association.

Dr. Edebohls, of New York, and Dr. Sutton, of Pittsburg, were welcomed to the Convention, and requested to participate in the discussions.

The Question of Medical Defence.—This was introduced by Dr. Russell Thomas, of Lennoxville, Que., who had been delegated by the St. Francis District Association to present this subject to the Canadian Medical Association. He made a strong plea for the

formation of a Medical Defence Union, and thought that all were agreed in the necessity for such. He supported his contentions by citing two or three cases already well known to medical practitioners in Canada, and after showing that such Defence Unions were a success in England, he concluded by outlining the plan of medical defence already in vogue and supported by the St. Francis District Medical Association. The discussion of this important matter was deferred until later on in the session.

Address in Medicine.—“*The Question of Medical Education.*” —Dr. J. R. Jones, of Winnipeg, delivered this address. In opening his remarks, he referred to the unsolved problems of medical education, the importance of which were especially manifest in view of the establishment of a Dominion Medical Board. Uniform or equivalent curricula, he thought, would greatly facilitate paving the way for the accomplishment of this object. He thought that the great aim of the Canadian Medical Association should be to create a Dominion Medical Board upon such a sound and enduring basis that the qualifications could be registered in every province of the Dominion. They should not only be Canadian, but Imperial—capable of registration in Great and Greater Britain. There should be no special education for the profession of medicine, and the defect in the preliminary education of medical students should be corrected. The standard is not high enough. Many students come into the medical college, their minds totally unprepared, undisciplined, not competent to engage in the different studies of a profession to advantage. Dr. Jones would not eliminate Latin, but would go a step further, and advocate a more general knowledge of Greek, as Greek was *par excellence* the language of science. He quoted from two eminent authorities, who favor the retaining of “Classical Education” as a training for professional studies,—Dr. Alexander Hill, a member of our own profession, who is Master of Downing College, Cambridge, and Professor Jebb, of Berlin. He referred to medical matriculation examinations, and deplored the lamentable defects in the English paper, the most neglected subject in our primary schools. From an experience of many years as an examiner at the University of Manitoba, Dr. Jones has concluded that the teaching of English takes a very subordinate position in our schools. The defect was a universal one; and it was obvious that if English should become a prominent subject of medical matriculation examinations, every student ought to be able to express his thoughts coherently and intelligently. The Didactic Lecture came in for adverse criticism, and defects and useless wastes of time, which could be more profitably employed, were pointed out. Persistent work in the dissecting room under the guidance of an experienced demonstrator, who will describe, discuss, and constantly orally examine the student, is a rational and effective method of teaching Anatomy. Medical Jurisprudence and Sanitary Science were not properly taught.

Dr. Jones supported the “case” method of teaching; and from

personal experience he favors the English system of clinical clerkships and dresserships as the most feasible, practical, and thorough for the development of medical teachings. He referred to the question of Dominion Registration, and pointed out two serious objections to Dr. Roddick's Bill: First, the great number of the representatives on the Council, entailing expenses beyond at least our immediate resources; and second, the fact that one of the contracting parties to Dominion Registration may secede, and the elaborate fabric, the work of many years, tumble to the ground. The able paper of Dr. Jones was received with much gratification by the Association.

Dr. R. B. Nevitt, Dean of the Woman's Medical College, Toronto, in moving a vote of thanks to Dr. Jones for his excellent paper, stated that he had placed his finger on the weak point of medical education. Dr. S. J. Tunstall, of Vancouver, seconded the motion for the vote of thanks, and also congratulated Dr. Jones for the excellent manner in which he presented his subject.

Dominion Registration.—Dr. T. G. Roddick, of Montreal, who has so long and so ably advocated this much-to-be-desired measure, delivered a stirring address on the subject, ably reviewing the subject of Inter-Provincial Registration from the time of its inception to the introduction of his bill at the last session of the House of Commons. The special committee appointed on this subject had not yet reported, so the discussion was postponed until the committee had a chance to meet and report later on in the session. Dr. Roddick now seems to hold to the opinion that the suggestion of Dr. Britton, of Toronto, that of representation by population, for Ontario at least, would be advisable.

Infectious Pneumonia.—Dr. W. S. Muir, Truro, Nova Scotia, read this paper. He reported four cases, all of which had occurred between the 1st and 13th of April of this year, in the same house and in the same family. The first occurred in a child of ten years, the disease terminating by crisis on the sixth day, the child making a good recovery. A sister, aged 14, contracted the disease; terminated by crisis on the ninth day, but followed two days after by left-sided pleuro-pneumonia. This proved fatal. The third occurred in a sister fifteen years of age, beginning with a pain on the left side and terminated on the tenth day by crisis and recovery. Number four developed pneumonia, but recovery was quick, the patient being about in two weeks. There was no influenza in the town at the time. Dr. Muir spoke of the organism of pneumonia, its cultivation and its detection.

FIRST DAY—AFTERNOON SESSION.

President's Address.—As this was the first time that the Canadian Medical Association had met in Manitoba, Dr. Chown referred briefly to the future of that important province. Although less than 10 per cent. of the arable land was under cultivation,

Manitoba's farmers would this year have a crop estimated at 85,000,000 bushels of grain. He then referred to the work performed in Winnipeg for the purpose of making that city a healthy one, and in spite of the level nature of the land an excellent system of sewers had been introduced through all the streets, and efficient arrangements had been made for regular flushing of the sewers by means of tilting basins at the upper end of each main sewer. As Winnipeg has two rivers at her door the problem of removing sewage was easily and safely solved. Dr. Chown then referred to the water supply, and said that the people of Winnipeg enjoyed as pure water as could be found in the world. An examination of the city water would show that there was in it only nine to thirty colonies of bacteria. The water is taken from an artesian well seventeen feet in diameter and forty-eight feet deep, and although they have been pumping for months a supply of from two million to three million gallons per day, there is not the slightest evidence of any diminution of the amount flowing in. This well is supposed to tap an underground passage which runs from Lake Manitoba, and as this lake is 130 miles long the supply is inexhaustible. The underlying rock formation in that section of Manitoba is a magnesia limestone and, consequently, the water contains a large amount of the carbonate of lime and of magnesia, and is too hard for satisfactory use in boilers and hot-water appliances. This is overcome by using Clarke's method of softening by precipitation of these carbonates through the action of limewater; and the softening plant is unique on this side of the Atlantic. Dr. Chown then referred to the question of tuberculosis, and thought that Koch's tentative denial of the oneness of tuberculosis of man and tuberculosis of cattle still needs the proof of non-inoculability from cattle to man. He instanced cases of young farmers free from tuberculous taint, living in newly-built houses harboring no bacilli, and separated by long distances from their neighbors, in whom tuberculosis constantly makes its appearance, and we have here an experiment on a wide scale, and if you can eliminate heredity, house infection and contagion from other cases, to what cause can you ascribe the origin of these outbreaks? Medical education, the plan of Dominion Registration as introduced by Dr. Roddick, malarial fever, proprietary drugs, the progress in surgery, and the future of bacteriology and hematology, were subjects ably dealt with; and in concluding Dr. Chown felt that a duty rested upon the medical profession to get at the true cause of all forms of disease and rescue the public from both the honest fanatic and the ignorant pretender by doing not only all what these claim, but doing more and doing it better.

Sir James Grant, of Ottawa, moved a vote of thanks to the President, and characterized the address as extremely interesting and instructive. Dr. J. L. Bray, of Chatham, seconded the motion.

Epidemic Cerebro-Spinal Meningitis.—Dr. James McKenty, Gretna, Manitoba, presented this paper, which gave an account of

an epidemic occurring in North Dakota during the winter and spring of 1893. It occurred within an area extending fifty miles from east to west and twenty miles from north to south, and was comparatively definitely limited. About seventy persons were seriously ill, and almost as many others suffered from mild manifestations of the disease. Of the seventy cases twenty-five ended fatally—a mortality of about 35 per cent. In the practice of Dr. McKenty there occurred some thirty cases, a brief record of twenty-two of these being kept. The average age was seventeen years; the youngest fifteen months, the oldest thirty-eight years. The duration of the disease extended from twelve hours to fifteen weeks. No *post-mortem* was made in any case. Dr. McKenty then described in detail the clinical aspects of several cases.

Splenic Anemia, with Case.—Dr. A. J. Macdonnell, Winnipeg, contributed this paper with the history of the case. This was an exceedingly rare disease. In 1898 the number of cases recorded did not exceed thirty, but since that time there have been fifty additional cases reported. R. N., aged 27; environment good; has never had malaria; habits and mode of life good; positively never had syphilis. The present illness began in August, 1899. Felt heavy on the right side with a feeling of fulness and weight. In January, 1900, gave up work on account of muscular weakness. There was no vomiting. The patient consulted Dr. Macdonnell in March, 1900, walking into his office with considerable difficulty. There was no enlargement of lymphatic glands. Enlargement of the stomach could never be percussed or palpated. Liver dulness was practically normal. There was no jaundice or pain in the liver region. The patient succumbed to the disease, but no *post-mortem* was held. Another case occurring in a patient aged 17 was reported. Dr. Bell made a blood count in this case, which at different times ranged 3,540,000, then 3,600,000, then 3,400,000, with 7,602 white blood cells. In this case all the other organs were normal, and there seemed to be no predisposing cause in this case. Dr. Macdonnell stated that only ten autopsies had been made on people dying from this disease. He referred to the conditions found *post mortem* in these cases. The treatment for these cases was stated to be rest, diet, and vigorous doses of arsenic. The mortality is set down at 20 per cent. As far as operation is concerned, physicians will not be satisfied until it is clear that the patient recovers from the operation as well as from the disease. If we are sure of our diagnosis, then surgical intervention is deemed advisable.

Physical Development.—Dr. J. N. Hutchison, of Winnipeg, read a carefully prepared paper on Physical Development. The paper did not deal with anything new, but called attention to and emphasized certain facts of considerable importance. He considered that children were sent to school at too early an age, and as a result there was danger of brain over-work. He insisted upon the necessity of having healthy parents, and deplored the system of

education which develops the mind at the expense of the body. He was an advocate of periodical lectures by duly qualified physicians to separate classes of boys and girls on the subject of sex; but the primary responsibility in this matter, he placed upon the parents. There would be real progress in the prevention of tuberculosis when people, the subject of the disease, recognized that they should not marry. The paper, which was listened to with close attention, closed with a reference to the problems of those unfortunates who are neither mentally nor physically qualified for the duties of life.

Report of Cases Treated with Superheated Dry Air.—Dr. W. H. Pepler, of Toronto, introduced this subject in a paper which cited his experience and observations in the treatment of certain cases by this plan or process. He briefly described the apparatus and the method of treatment. It only takes twenty minutes to reach a heat of 300° F. The average duration of the application of the heat is forty-five minutes. The physiological and therapeutical effects noticed were referred to, as dilatation of blood vessels, etc. He administers the treatment one hour after meal time with due regard that there shall be as little excitement and exertion as possible. He has not seen any ill effects from the treatment. He first gave notes of the case of a patient, a man aged 35, who had suffered for some time with varicose ulcer of the right leg, with considerable pain. This patient had a treatment of thirty-five minutes' duration, and was able to walk home with very little discomfort. After three times, in ten days, the ulcer was very much reduced in size. The second was a patient twenty-two years of age, who had been troubled with rheumatism for two years past. A temperature of 320° was employed with good satisfaction. Several other cases of rheumatism and eczema were reported. The treatment in each case proved highly satisfactory, patients never complaining of any discomfort, and all expressing satisfaction with the treatment. Dr. Pepler subjects a considerable portion of the patient's body to a temperature from 280 to 320° F. The results are often not apparent for some time after treatment.

Dr. McAdam, of Battleford, asked Dr. Pepler if he had ever tried the treatment with high temperature, where he had any doubts of the condition of the heart.

Dr. MacDonald, of Brandon, referred to a case which had come under his observation in which there was heart trouble. Perspiration occurred freely, but with no effect in a depressing way upon the circulation. Treatment in this case was continued for two weeks, but he had never determined that there had been any effect upon the heart, although there was a small heart-lesion at the time.

Dr. Pepler, in reply: He could not speak personally as to any deleterious results from weak heart. Of course there were many cases reported where heart trouble was present. He personally had never noticed any heart or head symptoms in his cases. He thought with care there would be no bad results.

Orthopedic Treatment of Deformities and Disabilities Resulting from Diseases of the Nervous System, with special reference to tendon transposition.—By Dr. B. E. McKenzie, of Toronto. He spoke of disabilities and deformities resulting from paralysis, some of which were commonly regarded as hopeless; but the conditions of a great majority of them were remediable, and should receive a considerable amount of attention. He was at some pains to explain the respective motion of joints, particularly the ankle joint and knee joint, especially calling attention to the normal conditions of equilibrium, and then showed how the muscles of some of the groups at times become paralyzed, and the balance and equilibrium thereby destroyed. Mechanical treatment was often necessary, and often efficacious as well; massage and electricity had their respective places, but he made particular reference to the method of treatment that had been in vogue for twenty years and had been introduced on this continent by Dr. Parish, of Philadelphia. He went carefully into an explanation as to how muscles can be transferred from their usual point of action, and then he gave an account of several cases in which he had successfully accomplished this. In his opinion amputation of a limb because of apparent disability should seldom or never be resorted to.

In answer to Dr. McAdam, Dr. McKenzie disapproved of jackets in treatment of curvature of the spine.

Dr. Clarence Starr, of Toronto, stated the subject was of great interest to him as he was interested pretty largely upon the same lines of surgery. Dr. McKenzie had indicated a large number of cases of paralyses which can be wonderfully helped by operative procedures. Dr. Starr thought that Dr. Bowlby, of Boston, deserved a great deal of credit for the work he has performed in this connection.

Dr. H. B. Small, of Ottawa, referred to a case Dr. McKenzie had operated on. In this case, previous to operation, the boy had great difficulty in arising from the sitting posture, and when walking he had to rest every few yards. After the operation he was very much improved, and when Dr. Small last saw him about a week ago he could walk very easily, and never had to support himself. The improvement during the last four or five weeks was especially very marked.

SECOND DAY—MORNING SESSION.

Mild Small-pox.—Dr. G. A. Kennedy, McLeod, Alberta, presented this paper. It dealt with the recent outbreak of the disease in the North-West Territories—an outbreak which was widespread and which had existed for some time before its true nature was recognized. Dr. Patterson, Quarantine Officer for the Dominion Government, was satisfied that there had been 1,500 cases. A noteworthy fact was that the greatest number of cases occurred among the French half-breeds, who had never been vaccinated, and further,

Indians on reserves had not suffered to any great extent, as annual vaccination is the rule. Not one case was seen or heard of among Galicians, Doukhobors, or Roumanians, which was due to the fact that compulsory vaccination was the rule in youth, and they had been re-vaccinated on their recent passage across the Atlantic, and at Halifax. Fifty per cent. of all cases were extremely mild in character; forty per cent. were cases of typical varioloid; ten per cent. were severe, almost confluent. The mortality was slight, only thirteen deaths occurring; and the disease prevailed fully as much amongst adults as amongst children.

Dr. Muir, of Truro, N.S., discussed the merits of the different vaccines on the market, and the paper was further discussed by Dr. MacDonald, of Brandon, Dr. Inglis, of Winnipeg, Dr. D. H. Wilson, of Vancouver, and Dr. Montizambert, of Ottawa. The latter considered it would be unfortunate if the impression went abroad that any doubt existed in the minds of the members of the Canadian Medical Association as to the true nature of the disease which had been epidemic for some years. He considered the facts presented in Dr. Kennedy's paper relating to Doukhobors and Galicians were perhaps the most valuable portion of it.

At the close of this discussion, the following resolution was moved by Dr. R. S. Thornton, seconded by Dr. J. L. Bray, and unanimously adopted: "That in view of the general prevalence of small-pox throughout the continent, this Association desires to urge upon the profession and the public generally, the necessity of vaccination and re-vaccination."

Chronic Ulceration of the Stomach Simulating Cancerous Disease—Relation of a Case of Gastro-Enterostomy with Murphy Button—Recovery.—By Dr. J. F. W. Ross, Toronto. This occurred in a woman twenty years of age, the condition of whose stomach had been bad for three years. She was a nurse in the Training School of a hospital, and her gastric conditions grew gradually worse and worse. Dr. Ross was asked to see the patient by Dr. E. B. O'Reilly, Hamilton, in December, 1899. He found her emaciated with the opium habit already formed. In January, 1900, he again saw her, with Dr. Griffin, of Hamilton. At this time rectal alimentation was being persevered in with considerable benefit. In March, 1900, she was discharged from the hospital, and remained well for two weeks. As soon as food passed into the stomach, great rigidity of the right rectus muscle was noted. When the patient came under Dr. Ross's attention she weighed about 75 lbs. As malignant disease of the stomach is rare at this age of life, it was difficult to diagnose the tumor as such, and the symptoms pointed to the pyloric end of the stomach. It was not possible to say whether cancerous or not. The symptoms pointed to the presence of ulcer, but the thickening easily made out led to the belief that malignant disease had been grafted on to the ulceration. Some dilatation also could be made out, but the rhythmic muscle

waves so characteristic of pyloric obstruction could not be found; but a large growth was found at the pyloric end. The case was looked upon as hopeless, and decision was arrived at not to remove the growth, but to give temporary relief by gastro-enterostomy. This was done, and the patient made an uninterrupted convalescence. Eleven months after the operation the patient weighed 140 lbs., and looked the picture of health. On examination of the abdomen no mass could be felt, and the patient was not suffering from any gastric symptoms at all. Dr. Ross then went into the literature on the subject, quoting Fagge, Sydney Martin, Moynihan, and Mayo Robson.

Dr. Laphorn Smith, Montreal, began the discussion, stating that the case was especially interesting to him, but rather from the general practitioner's point of view. He believes that no case of cancer of the stomach ever begins as cancer of the stomach. First, there is some sort of irritation of the mucous membrane. This irritation finally becomes a chronic ulcer, and upon this the germ of cancer is engrafted, or whatever it is which is the essential constituent of the cancerous process.

Dr. Martin, Montreal, discussed the importance of the examination of the stomach contents in these cases.

Dr. Bruce, Toronto, stated that he had an experience with a case a year ago which corresponded closely to the one Dr. Ross has reported. His patient was thirty-eight years old.

Dr. Gilbert Gordon, of Toronto, thought that we should look at these cases from the standpoint of the physician as well as from the standpoint of the surgeon.

Dr. Howitt, of Guelph, stated that the second case of ulceration of the stomach upon which he operated was one of acute perforation.

Dr. Ross thanked them for the reception they had given his paper.

Some Forms of Hyperacidity and their Treatment.—Dr. C. F. Martin, of Montreal, presented notes of some interest, judging from the results of systematic examination of the gastric contents. The unfortunate general employment of the term dyspepsia is responsible for the disregard of this condition. In the case of organic disease producing excessive secretion, the diagnosis is often difficult. He gave the history of two cases in illustration, the second being an individual forty-five years of age, who gave the usual history of having been ill for six months. There was no obstruction of the pylorus, but simple dilatation, and the diagnosis was hyperchlorhydria with simple dilatation of the stomach. He also referred to the medical treatment following gastro-enterostomy.

Dr. Macdonnell, of Winnipeg, discussed this paper.

Medical Defence.—The report of the Committee on Medical Defence was here presented by W. S. Muir, of Truro, N.S. It reported favorably on the formation of a Medical Union, and the organization thereof was immediately perfected. It will be known

as the Physicians' Protective Association will be incorporated, and will have for its object the protection of the character and interests of medical practitioners in Canada. It will further promote honorable practice, will aid in suppressing or prosecuting unauthorized practitioners, and will seek to advise and defend, or assist in defending members, in cases where proceedings involving questions of professional principle or otherwise are brought against them, and other like matters. Dr. R. W. Powell, of Ottawa, was elected President; Dr. McKinnon, of Ottawa, Secretary, and Dr. James Grant, jun., of Ottawa, Treasurer.

Report of Committee on Dominion Registration.—It is proposed to secure an amendment to the B. N. A. Act, or to take advantage of section 91 of that Act, and under it obtain legislation from the Dominion Parliament, by which the profession in Canada might form a Dominion Council, and which could be supplemented by legislation by the various provinces recognizing any certificate of standing issued by the Dominion Council as entitling a holder to practise in such provinces. Dr. Muir approved of Dominion Registration and spoke for the Province of Nova Scotia. Dr. Jones voiced the sentiments of the profession in Manitoba. Drs. A. A. Macdonald and J. L. Bray endorsed the scheme for Ontario. Dr. Russell Thomas spoke for Quebec. Dr. Christie said that New Brunswick was in favor of Dominion Registration. Dr. Lafferty said the North-West Territories were favorable.

SECOND DAY—EVENING SESSION.

Address in Gynecology: Cancer of the Uterus with Lantern Demonstration.—This was a very interesting and profitable demonstration conducted Dr. Thos. S. Cullen. In introducing Dr. Cullen, Dr. Chown spoke of him as a young Canadian who had gone wrong in having removed to the United States and having never returned. Dr. Chown considered that the experimental work pursued by Dr. Cullen if done in Canada would meet with as signal success as that which attended his labors in the United States. For over an hour Dr. Cullen was engaged in showing a large number of excellent lime-light views, the results of microscopic examinations of tissues, each view being lucidly explained by the demonstrator. At the close of this excellent demonstration Dr. Cullen was accorded a hearty and unanimous vote of thanks moved by Dr. Eccles, of London, and seconded by Dr. Gray, of Winnipeg, and carried amid great applause.

Skin Diseases, with Lantern Demonstrations.—This was another valuable demonstration, and was conducted by Dr. Francis J. Shepherd, of Montreal. He first exhibited cases of blastomycetic dermatitis, and further spoke of a few cases which he had seen of this disease. Views were given also of cases after treatment with iodide of potash. Some interesting views were those caused by drug eruptions, of which he showed two or three due to salicylate

of soda. In one of these Dr. Shepherd said that the lesions first came out with large welts like urticaria. This is rather a rare form of drug eruption. It appeared after two doses of ten grains each of the drug. One case almost died of acute laryngitis from the eruption in the throat. Amongst other views shown were papular purpura, which is generally associated with rheumatic attacks, psoriasis of the nails, X-ray burns as the result of one application, and most interesting were cases of small-pox, one showing pustules upon the palm of the hand, particularly interesting as in adults you never see chicken-pox upon the palm of the hand, but you invariably do in small-pox. Views of feigned eruptions were also shown. This demonstration proved so interesting to the members that Dr. Shepherd was frequently called upon to give more or go on.

The Varieties and Distribution of Bacillus Diphtheria and Their Clinical Significance.—Dr. F. F. Westbrook, of the University of Minnesota, presented a paper on this subject, primarily from the laboratory point of view. He exhibited a carefully prepared chart showing in tabulated form the results of numerous examinations in schools, and stated the conclusions which he deduced from these facts. Formerly, it was believed that the bacillus remained localized at its point of entrance, but now within recent years, however, careful observations have shown that the toxins had been distributed throughout the body and the bacillus itself found in organs far removed from the atrium. From evidences of 230 cases of diphtheria at autopsy observers had called attention to the frequency with which the bacillus of diphtheria was found in the organs of the body. The bacillus and its toxins have been shown to be capable of producing lesions which differ greatly from each other, as in ulcerative endocarditis, meningitis, etc. In summarizing Dr. Westbrook said where each school was reported, and where great care was taken in the isolation of clinical cases with typical form, the percentage was very small.

Removal of Hairy Tumor from the Stomach Weighing 23 Ounces—Specimen—Recovery.—By Dr. H. A. Bruce, Toronto. The subject of the case was a woman, aged 26; had been married six years and had two children. A lump was noticed in the abdomen two months previous to the birth of the last child. Patient had no symptoms. The lump was about five inches in width and it could be lifted forwards. It reached to within three inches below the umbilicus. It gave the patient no special discomfort, there being absolutely no symptoms present. Dr. Bruce advised exploratory incision. This was done on July the 22nd last, at St. John's Hospital, Toronto. On opening the abdomen in the middle line the spleen and kidneys were found in a normal condition, but there was a large mass in the neighborhood of the stomach. The surgeon could make out the mass lying free in the stomach, a portion extending through the pyloric end of the stomach. An incision was made into the stomach and the mass removed. After

removing the mass of hair the opening of the stomach was closed in the usual way. Hot solution was given for two hours and nutrient enemata for six hours. Twenty-three hours after the operation sips of hot water were given by the mouth. Forty-eight hours after operation patient was given half an ounce of milk and limewater every half hour. She left the hospital on the twentieth day. The tumor was entirely of hair exactly the same color throughout, and the same color as the hair on her head. It was about 24 inches in length, being two inches in diameter at one end and gradually tapering to a point at the other. Dr. Bruce considered this case rare, but offered no solution as to how the hair got into the stomach. There were no evidences of hysteria present in the patient. There are some specimens of hairy tumors at the McGill Museum at Montreal.

THIRD DAY—MORNING SESSION.

A Case of Transplantation of the Ureter for cure of Uretero-Vaginal Fistula.—By A. Laphorn Smith, Montreal. This occurred in a married woman, thirty-four years of age, who came to Dr. Smith on the 1st of July, 1901. During parturition forceps were employed and the vagina lacerated, and ever since there has been a constant flow of urine by the vagina. Operations for her relief had been performed in England without success. Dr. Smith had seen Sanger perform an operation of this character in Leipsic when there three years ago, namely, to open the peritoneum running over the large vessels at the brim of the pelvis and to feel for the artery, see the vein and pick up the third tube, which was the ureter. The operation was done in the highest Trendelenburg posture. A very small incision was made in the peritoneum lining the pelvis in the line of the ureter, a silk ligature was passed around it, and then the ureter was severed a little above the ligature. The end of the ureter was split open to a distance of a third of an inch. A slit was then made obliquely into the right upper corner of the bladder, and the ureter stitched into it, the mucous membrane of the ureter to the mucous membrane of the bladder, with very fine chromicised catgut. This is the first time this operation has been done in Canada, and Dr. Smith stated that not a drop of urine had passed through the fistula since.

Syphilis as seen by the Ophthalmic Surgeon.—This paper was read by Dr. F. Buller, Montreal. In commencing his paper, Dr. Buller expressed the hope that it would elicit a little discussion. It often falls to the lot of the ophthalmic surgeon to discover the presence of active syphilitic virus where the disease had long since been considered cured, or where the subject cherished the belief that there was no more to fear from it. The ophthalmic surgeon is scarcely, if ever, called upon to treat the disease in the primary stage. The largest share of his work is in connection with the tertiary period, and in this class of case the disease has been

apparently cured for a long period of time. Dr. Buller considers that the time at which the syphilitic lesion makes its appearance is always a very important element in the diagnosis. Discussing medication, Dr. Buller does not believe that the protiodide of mercury, at least as ordinarily administered, is a reliable anti-syphilitic. He appears to favor the inunction method first and then gray powder. The following took part in the discussion of this paper: Dr. Lafferty, of Calgary; Dr. Muir, of Truro; Dr. Laphorn Smith, of Montreal, and Dr. Shepherd, of Montreal, who also condemned the protiodide treatment.

The Present Outbreak of Small-pox in America.—This subject was presented by Dr. H. H. Bracken, Health Officer, Minnesota. He outlined the origin and traced the course of many outbreaks in various parts of the State of Minnesota. The case of a porter on the Great Northern Railway, who arrived in St. Paul in March, 1899, was mentioned as the source of the outbreak. He was supposed to have contracted the disease in Seattle, and when told that he had the small-pox, he said that if so there was plenty of the same disease where he came from. Other epidemics were spoken of in various parts of Minnesota, with a total of 9,429 cases; and the disease has still many centres in that State. It is impossible to locate positively the source of the present widespread epidemic further than that it spread from the southern and south-western States into North Dakota, Minnesota, Nebraska, Montana, and Texas. Dr. Bracken showed that returning soldiers from the Philippines were not responsible for its introduction. He suggested that it was probably imported into the United States by Cuban refugees before war broke out between that country and Spain.

An interesting discussion took place on this paper. Dr. Russell Thomas wanted to know where the best vaccine was manufactured—a product that could be relied upon.

Dr. Inglis, formerly Medical Health Officer, Winnipeg, related his experience in the schools of Winnipeg, and spoke of some of the bad results resulting through impure vaccine.

Dr. Bracken, in reply: Vaccine was frequently spoilt by not being kept in proper temperatures, as it was frequently being shipped in cans which were too hot, and subsequently kept in warm offices. The Health Commissioner of Minneapolis kept all his vaccine in an ice-box, but, of course, not frozen, and he had obtained good results. Replying to a question in regard to isolation, Dr. Bracken favored eighteen days' quarantine.

The Necessity of a Recognition and Isolation of Trachomatous Patients in Canada.—In the absence of Dr. W. Gordon M. Byers, Montreal, Dr. C. F. Martin, of the same city, read this paper. The paper recited the history of a young girl from Glengarry County, Ontario, who came to the clinic at the Royal Victoria Hospital, Montreal, with a most intense condition of granular lids. She had been unable to open her eyes properly for months past, and her vision was reduced to the counting of fingers. The seriousness of

her disease had not been recognized at home, as she mixed freely with other members of the community. Another case was referred to in the County of Leeds, and in this case as well no precautions had ever been taken to prevent the spread of the disease. Dr. Byers believes that there are many unrecognized and untreated cases scattered here and there throughout the Dominion. The disease is said to be prevalent in districts of Manitoba and certain centres in the eastern counties of Ontario, and others in Quebec. The trachoma problem has had to be faced by one Government in Europe, and the matter has been brought to the attention of the Dominion Government, which has not yet taken any action in the matter. Dr. Montizambert stated that the question of exclusion of trachomatous immigrants had been under consideration by the Government for some time. He considered these people somewhat undesirable immigrants.

A Few Notes on the Treatment of Typhoid Fever.—Dr. J. L. Bray, of Chatham, discussed this subject under medicinal, dietetic and hygienic headings. The first he thought might be eliminated except in cases where complications arise, and he thought a certain amount of medicinal treatment useful during the initial stages. He was in the habit of employing calomel. Tympanites could be avoided to a great extent by a proper diet. In feeding he now gives very little milk, but that little always peptonized. He believes in making the patient drink two or three quarts of pure water in the twenty-four hours. Albumen water with sugar may be given from the first, after the first two weeks he gives liquid peptonoids, or some of the numerous preparations of beef, jellies, mutton broth, or a soft boiled egg.

As regards the hygienic treatment, the bedding and the night clothes should be changed daily. The room should be kept thoroughly ventilated, admitting plenty of fresh air and sunshine. The patient should be sponged frequently with tepid water, and you can get just as good results from tepid water as from sponging with very cold water or the cold bath, and it is not so distasteful to most patients. In hospital practice Dr. Bray used the electric fan after using the tepid water. He has found this plan very satisfactory, especially in young and sensitive children.

Dr. Russell Thomas discussed the paper and said that he had found the ice-cap beneficial, that it did not disturb the patient and had a decided effect in reducing the temperature.

THIRD DAY—AFTERNOON SESSION.

The Address in Surgery.—This was delivered by Dr. O. M. Jones, Victoria, B.C., and it proved a very able and masterful effort. He opened his address with a reference to surgical diseases in Western Canada as compared with those in the East, and stated that he had often found Western sufferers more impatient, which often demanded severer methods. He illustrated this by citing a

humorous incident. A lodging-house keeper on learning that one of her lodgers was to have an operation performed on a Wednesday, wrote to the surgeon asking that it might be postponed until Friday, as her daughter was to be married on Thursday, and they didn't want the corpse home until after the wedding. The address dealt mainly with surgery of the stomach, and related the deductions Dr. Jones had arrived at from his own experience of twenty-six cases. His first operation upon the stomach was in 1893—a case of pyloric obstruction in a wiry woman. Senn's plates were used. The patient died in three days, the result not being encouraging; and Dr. Jones attributed the failure to the use of catgut instead of silk sutures. The introduction of Senn's plates and the Murphy button gave a great interest to intestinal surgery, as before 1890 operations on the intestines were rare. He discussed the preparation for operation, and first spoke of gastrostomy, an operation which he had performed five times for ulcer of the esophagus. In four of the cases the operation was performed with very excellent results. He then discussed the class of cases in which pylorotomy is indicated, and said that rapidity of operation in these cases is the very important factor; prolonged operation has generally proved fatal. A suitable case should be cancer of the pylorus. The time occupied in performing the operation is not great. In one of his cases he performed posterior gastro-enterostomy; this patient still lives, and it is now nearly three years since the operation. Gastro-enterostomy was next discussed. This Dr. Jones considered the most important and most interesting part of the whole subject. It is the most frequent and the most useful and the simplest of all the operations upon the stomach. It is performed for pyloric cancer, ulcer and stenosis, and for gastric ulcer, dilatation, etc. Nothing can be simpler than this operation performed with the Murphy button. Dr. Jones has used it in fourteen cases, and in only one case was there any trouble. In two of his cases, which died from shock, he examined one and found perfect union. He has found that the passage of the button has taken from fourteen days to four months; and in several cases he has not been able to obtain the button. A recital of several cases followed which proved very interesting. Dr. Jones closed his paper with a few words on duodenal ulcer.

Dr. F. J. Shepherd, of Montreal, proposed a vote of thanks; Dr. A. A. Macdonald, of Toronto, seconded this; Sir James Grant, of Ottawa, supported the motion, which was unanimously passed by the Association.

A Surgical Procedure for the Relief of Ovarian-Tension Pain.

—Dr. Henry Howitt, Guelph, Ont., read this paper. Is not pain frequently, if not usually, caused by tension on some nerve filament? In Dr. Howitt's opinion the answer should be in the affirmative. The operation Dr. Howitt employs is quite simple. The ovary is exposed and then a number of cross sections are quickly made through the tense capsule in such a manner as to

divide it. Then the larger Graafian follicles are opened. These are merely touched with carbolic acid. If the capsule is thickened a portion should be removed. Hemorrhage has never been troublesome. Adhesions give rise to no complications. Dr. Howitt recited the histories of two or three cases in support of the operation.

Dr. Laphorn Smith stated that he had never heard of this operation before, and considered that it was original with Dr. Howitt.

Symposium on Tuberculosis.—Prof. Russell, of the University of Wisconsin, introduced this subject in a careful yet exhaustive paper on human and bovine tuberculosis and their inter-relation. The importance of any phase of investigation relating to tuberculosis and its relation to milk is unquestioned in these latter days when the general public is beginning to appreciate, for the first time the magnitude of the problem that confronts them in attempting to lessen the ravages of the "great white scourge" of the human race.

In considering this subject it may be approached from two points of view :

1. From the standpoint of animal industry.
2. From that of public health.

BOVINE TUBERCULOSIS AND ANIMAL INDUSTRY.—The rapid extension of the disease amongst cattle within the last few decades has forced upon breeders and dairymen the necessity of considering this subject whether they desire it or not. It is customary in many quarters, even yet, to decry all consideration of this matter as unnecessary, inexpedient, and harmful to the dairy interests. But, as is too frequently the case, the motive for such action rests upon a financial foundation, and many breeders are averse to a calm, judicious discussion of the matter simply because it may mean financial loss to them.

Since the introduction of the tuberculin test as an aid in the diagnosis of the disease in cattle, it has been positively determined that the malady, at least in its incipient form, is very much wider spread than was formerly supposed, but it by no means follows that all animals that react to the tuberculin test are actually in a condition in which they or their products are dangerous to man and beast.

The slow, insidious nature of the disease that characterizes it in the human is also to be found in the cattle, and not infrequently an animal may be infected with the seeds of the disease for a considerable time—even a year or so—without showing in any degree physical symptoms that are manifest to even the animal expert. Such animals are not diseased in the ordinary meaning of the term, *i.e.*, they are not capable of transmitting the disease, either directly or indirectly, through their milk or meat. The affection in such cases is latent, generally confined to various lymphatic glands; but animals so affected are, however, potentially dangerous, for the

latency of the disease may be overcome through the operation of various factors, and the chronic type may thus be awakened into an acute phase. It is in this way that the disease spreads slowly and unperceived through a herd. Before it has made such inroads as to cause actual death of any considerable number of animals, many more have acquired the trouble, at least in the earlier phases. Necessity of controlling its spread and eradicating it is evident for the sake of the herd itself, if from no other point of view. Successful animal industry, especially with cattle, requires that herds shall be kept free from all taint of this disease. As to treating milk, Prof. Russell said pasteurization and sterilization were the two best forms of applying heat to destroy the organism. He recommended the rotary pasteurizing machine, one of which has been used in Winnipeg for some years, as the best method of removing organisms from milk.

Dr. Good, of Winnipeg, in discussing the paper, said that it afforded him some relief to learn that milk is not so dangerous after all. He stated that he had been avoiding milk and all organic fluids for the past year or two, but he was glad to know that he could now go back to its use with the same freedom as in its younger days. He then moved a vote of thanks to Prof. Russell, seconded by Dr. McArthur, which was unanimously adopted.

Dr. A. J. Richer, of Montreal, contributed the next paper on "The Sanatorium Treatment of Tuberculosis." This treatment had been introduced by Dr. Trudeau in America under great difficulties, and at the present time this distinguished scientist was able to house and treat over one hundred individuals in his institution. According to Dr. Richer, the treatment is made up of rest, outdoor life, over-feeding, and medical supervision. This latter was described as the keynote to success in phthisical treatment. Over-feeding was also emphasized.

The last paper was contributed by Dr. Gilbert Gordon, of Toronto, and it referred to the etiology and the early diagnosis of pulmonary tuberculosis. He spoke of the early stages of the disease, and thought that we ought to be able to diagnose it before the appearance of the bacilli in the sputum. Direct inheritance he considers very rare. The inhalation of dried sputum is the most direct cause. Dr. Gordon considers that we are woefully behind in Canada in fighting this plague, and more money should be spent by Governments and philanthropic individuals in fighting this disease. He went carefully into the symptoms of the pre-tubercular stage, and considered that a persistent cough was a very dangerous symptom.

An important discussion took place upon this topic. Dr. Lafferty warned the profession in Ontario against sending advanced cases to the North-West Territories. Dr. Barrick, of Toronto, pointed out that Ontario was leading in regard to the treatment of tuberculosis, and he hoped to see the sanatorium brought with a wide-open door to all conditions of life. Dr. Brett, of Banff, suggested

that the Association should pass a resolution pointing out to the Parliament of Canada the necessity of providing for the establishment of a sanatorium for the benefit of the community. This was subsequently done.

The report of the Nominating Committee was presented by Dr. W. S. Muir, Truro, N.S., who expressed regret at having to accept the resignation of their General Secretary, Dr. F. N. G. Starr. Montreal was selected as the place of meeting in 1902, and a suggestion was left with the members of the Association that they meet in British Columbia the following year.

These officers were elected for the ensuing year: *President*: F. J. Shepherd, Montreal. *Vice-Presidents*: Prince Edward Island, S. R. Jenkins, Charlottetown; Nova Scotia, T. F. Macdonald, Hopewell; New Brunswick, Wm. Christie, St. John; Quebec, J. Alex. Hutchison, Montreal; Ontario, Bruce L. Riordan, Toronto; Manitoba, A. J. Macdonnell, Winnipeg; North-West Territories, H. G. McKid, Calgary; British Columbia, J. M. Lefevre, Vancouver. *General Secretary*: George Elliott, 129 John St., Toronto. *Provincial Secretaries*: Prince Edward Island, H. D. Johnson, Charlottetown; Nova Scotia, J. M. McLean, North Sydney, C.B.; New Brunswick, W. I. Ellis, St. John; Quebec, C. F. Martin, Montreal; Ontario, H. A. Bruce, Toronto; Manitoba, J. T. Lamont, Treherne; North-West Territories, G. A. Kennedy, Macleod; British Columbia, G. Morris, Vernon. *Treasurer*: H. B. Small, Ottawa. *Executive Council*: Jas. Stewart, T. G. Finley, J. M. Elder.

The Winnipeg meeting of the Canadian Medical Association will go down in the annals of the history of that Association as the best meeting ever held under its auspices. On the first day alone, 130 members were registered, and the total number at any time reached 177, a number considerably larger than that at Ottawa last year and second in point of numbers to the meeting at Toronto in 1899. A large number of new members were elected, particularly from Ontario, Manitoba, the North-West Territories and British Columbia. Every province was represented at the Association meeting with the single exception of Prince Edward Island, one delegate coming as far as North Sydney, C.B. The meeting was generally voted a pronounced success; and certainly the profession in Winnipeg and Manitoba, and the citizens of Winnipeg, more than eclipsed, in point of social functions, any previous meeting. The reception by the Board of Governors of the Winnipeg General Hospital, the reception by the ladies of Winnipeg at Wesley College, the special trip down to Lower Fort Garry, where Mr. and Mrs. Chipman extended their hospitality to the members and their wives and invited guests from Winnipeg, the visit to the Ogilvie Mills, the reception at Government House by Lieutenant-Governor and Mrs. McMillan, and the special trip out to Brandon through the great wheat belt of Manitoba, with the entertainment provided by the ladies of Brandon—all will stand as a series of social functions which have never been surpassed, and will probably remain

unsurpassed for some years in the history of the Canadian Medical Association meetings. One of the best and most important discussions took place on the formation of a Medical Defence Union; and it is very gratifying to have to record that such an organization was unanimously supported by the Association. All the leading officers of this Protective Association are located in Ottawa, and Dr. Russell Thomas, of Lennoxville, P.Q., along with W. S. Muir, of Truro, N.S., is deserving of much praise for the great good work he has performed in this connection. Much regret was expressed at the resignation of the General Secretary, Dr. F. N. G. Starr, of Toronto, who has so long and so faithfully, so ably and so energetically discharged the responsible and important duties of this position. At a time when the Association is so prosperous, it is due to the new General Secretary that a united and earnest effort be put forth by all the members of the Association to continue that prosperity.

DR. PRICE-BROWN'S book on diseases of the nose and throat has been placed on the list of books recommended by the New York Post-Graduate School.

THE following graduates in medicine have been appointed on the staff of the General Hospital: From the Toronto Medical School—Drs. D. J. G. Macdougall, F. A. Cleland, H. S. Hutchinson, W. H. Cronyn, and J. H. Trout. From Trinity Medical School—Drs. W. G. Macdonald, K. Martin, D. Anderson, G. S. Ryerson and W. G. Collinson. From the Ontario Women's Medical College—Dr. Helen McMurphy. They commenced their duties July 1st.

A Toronto Student Honored.—Another honor has been conferred on a graduate of the University of Toronto by an American university. Dr. B. A. Cohoe, of Toronto, gold medalist in anatomy at the recent final examinations of Toronto School of Medicine, has been appointed Assistant Professor of Anatomy by the new Cornell medical faculty. Dr. Cohoe was one of Toronto's most brilliant graduates. He entered the university in 1894 as Prince of Wales scholarship man, and during his course took first-class honors each year in the science department. Dr. Cohoe will assume the duties of his new position in September.

Congratulations.—At the final meeting of the conference of the Association of Medical Superintendents of Hospitals, held in New York on the 13th ult., Dr. Charles O'Reilly, of Toronto, was elected Vice-President. Dr. O'Reilly, in returning thanks, said he thoroughly appreciated the honor of receiving the first "international" appointment made by the association in electing him to so high an office. He expressed the sympathy of Canadians regarding the illness of the President. Dr. O'Reilly referred also with satisfaction to the fact that Miss Grace Mackenzie, a "British-born nurse," was in charge of the distinguished patient in Buffalo.

In Memoriam.

" Youth proclaimed him as a hero ; Time, a statesman ; Love, a man.
Death has crowned him as a martyr, so from goal to goal he ran.
Knowing all the sum of glory that a human life may span."

—Ella Wheeler Wilcox.



WILLIAM MCKINLEY,
The Martyred President of the United States.

In this hour of awful tragedy and overwhelming grief, in which the whole civilized world mourns as one bereft, a nation speaks to a nation :

" Most truly do I sympathize with you and the whole American nation at the loss of your distinguished and ever-to-be-regretted President.
EDWARD REX."

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The Canadian Journal of Medicine and Surgery

J. J. CASSIDY, M.D.,
Editor.

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Clinical Surgery—ALEX. PRIMROSE, M.B., C.M. Edinburgh University; Professor of Anatomy and Director of the Anatomical Department, Toronto University; Associate Professor of Clinical Surgery, Toronto University; Secretary Medical Faculty, Toronto University.

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Address all Communications, Correspondence, Books, Matter Regarding Advertising, and make all Cheques, Drafts and Post-office Orders payable to "The Canadian Journal of Medicine and Surgery," 145 College St., Toronto, Canada.

Doctors will confer a favor by sending news, reports and papers of interest from any section of the country. Individual experience and theories are also solicited. Contributors must kindly remember that all papers, reports, correspondence, etc., must be in our hands by the fifteenth of the month previous to publication.

Advertisements, to insure insertion in the issue of any month, should be sent not later than the tenth of the preceding month.

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Editorials.

ARE BOVINE AND HUMAN TUBERCULOSES IDENTICAL?

NEEDLESS to say, Koch's assertion made in his London address (July 25th), that human beings are not infected from bovine tuberculosis, created widespread surprise, because "human and bovine tuberculosis have been pronounced to be one and the same affection" (Anders' "Practice of Medicine," 1900). Besides, according to the interpretation put on the researches of Koch, published in 1882, "The pearl disease (perlsucht) of cattle, a cheesy glandular disease of swine and a disease of fowls" (avian tubercle) were pronounced

by scientific writers to be identical with the tuberculous disease of man, the bacillus of tubercle being present in all (*vide* Flint, "A Treatise on the Principles and Practice of Medicine," A.D. 1884, p. 1130). In his latest address, Koch shifts his ground, contending that as sure proofs of the identity of the two forms of the disease, animal and human, were undiscoverable, he had to leave this question undecided even in 1882. He now contends that he has decided this question, and that he has demonstrated that human tuberculosis cannot be transmitted to bovines, pigs, asses, sheep or goats. From the facts adduced he maintains that human tuberculosis differs from bovine and cannot be transmitted to cattle.

But what about the susceptibility of man to bovine tuberculosis? Koch considers himself at liberty to say, that "if such a susceptibility really exists, the infection of human beings is but a very rare occurrence. I should estimate the extent of the infection by the milk and flesh of tuberculous cattle, and the butter made of their milk, as hardly greater than that of hereditary transmission, and I therefore, do not deem it advisable to take any measures against it." He then develops the idea that human sputum is the main source of human tuberculosis, shows the presence of foci of tuberculous infection in the crowded dwellings of the poor and in tenement houses, and indicates the need for hospitals for consumptives and sanatoria for obligatory notification of tuberculosis, for disinfection of the dwellings, bedding, clothes, etc., of tubercular patients, and the education of the public as to the best means of protecting one's self from the infection.

Tubercular infection of children by the milk of tuberculous animals has, up to the present time, been accepted as a well-established fact (*vide* Dr. Cornet, "Die Tuberkulose in den Strafenstallen," Zeitschrift fur hygiene, Bd. X. 1891). Of late, less importance has been attached to the infective quality said to be present in the meat of a tuberculous animal, for the bulk of experimental evidence would seem to show that, unless the parts consumed are the seat of tuberculous deposit, infection does not follow. It is acknowledged that contamination may take place in meat during the course of preparation for the market, as well as during its transportation, but the contamination would be from human sources. So, also, the experiments of Aufrecht, Chauveau, Klebs, Parrot, Trappeiner and others show that tuberculosis may be communicated by incorporating with food the expectoration from tuberculous patients.

Prior, therefore, to the deliverance of Koch's London address, it had been demonstrated that food, for instance, milk, may be rendered infective by the introduction of human tubercular sputum; but it must be acknowledged that this was not considered to be the usual source through which tuberculosis could be communicated to man from milk. On the contrary, it was authoritatively stated, all over the scientific world, that the source of tubercular infection was of animal origin, direct from the milk of an infected cow to the child which fed on it, especially when the animal had tubercular disease of the udder. Accepting and strongly endorsing the doctrine that bovine and human tuberculosis are identical, current medical science has taken a position from which it cannot recede without humiliation. To save the human race from "the white plague," many herds of valuable animals have been slaughtered, rigid systems of cattle inspection and regulations for the cattle and meat trades have been enforced on both sides of the Atlantic, particularly in the United States. It has been repeatedly asserted by prominent hygienists in Europe and America that to remove imminent sources of infection to man all tuberculous bovines should be destroyed and the milk of tuberculous cows declared unsalable.

Should Koch's doctrine prove true, all the expensive inspection of cattle and regulation of the meat trade, which have been founded on erroneous views in bacteriology, might be discontinued, as far as the prevention of human tuberculosis is concerned. The fight will be arduous. Before granting a final acceptance to Koch's doctrine, the experimental method will have to be applied. Candidates for inoculation with bovine tuberculosis will probably not be numerous, and the question may long remain unsolved.

A well-known physician of Paris, Dr. Garnault, has written to the *Matin*, announcing that although he is convinced that Professor Koch is wrong in his theory in regard to the non-infection of human beings with animal tuberculosis, he has addressed to Professor Koch a letter in which he offered to undergo the inoculation of bovine tuberculosis. He is forty-one years of age, in perfect health, and has neither wife nor child.

Dr. Monson, of Colorado, has also volunteered to subject himself to the infection of animal tuberculosis.

This is the surest way of testing the soundness of Koch's doctrine. Argument cannot forward the matter, and statistics will not accomplish what experiment alone can do.

There is a commercial side to the question of the infectivity of

tuberculous meat to man, as well as a hygienic one. The American cattle trade has taken high rank in Europe, largely owing to a rigid inspection of export cattle, from the time each animal is purchased in America until it reaches the market in Europe.

Carefully certificated cattle have been sent to Europe and a good price (\$92 to \$100 per head) has been paid for them. If inspection and the weeding out of degenerate, tuberculous cattle are unnecessary, because, according to Koch, animal tuberculosis is not infective to man, then cheap, low-grade cattle may be exported as well as high-priced, choice ones. Were such a suicidal policy adopted by American cattle exporters, the superiority of American meat in European markets would soon be disputed and denied. Whatever scientific value may attach to Koch's latest view on the non-infectivity of bovine tuberculosis to man, the wisest policy for American cattle exporters is to keep up their standards of cattle inspection.

J. J. C.

THE WINNIPEG MEETING OF THE CANADIAN MEDICAL ASSOCIATION.

INTO the list of the "has been" has gone the thirty-fourth annual meeting of the Canadian Medical Association. Unfortunately some of those who planned to be present were prevented by unforeseen circumstances, the writer among the number; our weather predictions were also unfulfilled; but the disturbance of the elements must have added to the scenic effect and given the smart Alec of the crowd a chance to air himself by inquiring, "When shall we . . . meet again, in hail, in lightning or in rain?"

We have button-holed several of the Toronto physicians who were present, and heard from them a graphic and satisfactory account of the meeting, which we have asked them to "put on paper" for THE JOURNAL, but, immediately upon hearing this request, an attack of modesty seized them and they rapidly sank into silence, so the same old office quill has again to do the scribbling, scratching out this time not what we saw, but "what we have heard, with confidence we tell."

Considering the distance Winnipeg is removed from many of the larger cities and towns of Canada, the attendance was very good; 176 registered, with twenty or thirty guests. The Toronto meeting in 1899 was the largest on record with 242 registered. Out of that number, however, ninety-nine were residents of this

city. The thirty-fourth annual meeting was a representative one, members being present from every province except Prince Edward Island, three or four Nova Scotians and three from New Brunswick. The President's opening address and the papers read were exceptionally good; but during the reading of Dr. B. E. McKenzie's paper the great hail-storm arrived and "crippled" the proceedings for fully twenty minutes, upsetting also, in a measure, the arrangements for the reception at the Hospital. The entertainments were numerous and very enjoyable. Every evening dinner parties were given by the hospitable residents of the city; a reception at the Wesley College buildings at which Dr. Drummond gave a couple of his inimitable recitations; a reception and garden party at Lower Fort Garry by courtesy of the Commissioner of the Hudson Bay Co. and Mrs. Chipman—going there a distance of twenty miles, by special train from Winnipeg; a champagne luncheon, given by Mr. F. W. Thompson, of the Ogilvie Milling Company (manufacturers of the well-known breakfast foods), and a very interesting tour of inspection of the building, explanatory of the process of converting the wheat from the golden harvest fields of Manitoba into flour; a reception from 5 to 7 o'clock at Government House, graciously tendered by the Lieutenant-Governor and Mrs. Mac-Millan. The privileges of the Manitoba Club were also accorded the visitors.

Dr. Cullen, of Baltimore, to whom Dr. Chown referred as "a Canadian gone astray," brought himself, his paper and limelight views to the meeting, and his charming bride to grace the social entertainments. Dr. Roddick and his scheme of Dominion registration were there and both met with a unanimous welcome. Dr. Bruce Riordan "blew in" from his famous trip to California along with Dr. Hutchinson, of Montreal, Surgeon-in-Chief to the G.T.R., and Mr. Fitzhugh, of railroad fame; genial Dr. Charles O'Reilly, Superintendent of Toronto General Hospital, and Vice-President of the International Association of Medical Superintendents of Hospitals. Many notable physicians, surgeons and specialists from other cities were present. The Toronto contingent also numbered Drs. J. F. W. Ross, Herbert Bruce, W. H. Pepler, Clarence Starr, F. N. G. Starr, J. S. Hart, Geo. Elliott and others.

Dr. F. N. G. Starr, the painstaking retiring General Secretary, who for eight years has occupied this rather unenviable position, being ever and always ready with facts and figures, and who has been so loyal to the society's best interests, has surely earned a rest-

from his assiduous labors. He tendered his resignation immediately upon the opening of the meeting. To his successor, Dr. Geo. Elliott, we tender our congratulations upon being elected to a position (entirely unsought for upon his part) he also is so well qualified to fill. Dr. Elliott's full report of the Winnipeg meeting may be found in this issue of *THE JOURNAL*.

We all look forward next season to meeting and greeting the new President, Dr. Shepherd, at Montreal.

W. A. Y.

OXALURIA.

THE condition known as oxaluria, which is characterized by a persistent excess of oxalate of lime in the urine, is noted among certain dyspeptics, and is now regarded as being due to a disturbed metabolism, particularly of the fats and carbohydrates. Transient oxaluria may follow the ingestion of certain fruits and vegetables. Oxalic acid, as binoxalate and quadroxalate of potassium, is present in sorrel, spinach, and tomatoes; as oxalate of sodium in parsley-piert (*alchemilla arvensis*); as oxalate of lime, in strawberries, garden rhubarb and asparagus. Consequently in gravel or kidney disease the use of such vegetables or fruits is forbidden on account of the passage into the urine of their oxalic acid as oxalate of lime, an insoluble salt, which may serve as the nucleus of a mulberry calculus, or failing that, will prove irritating to the urinary organs.

Attacks of gastro-duodenal irritation, followed by mucous diarrhea, have been traced by Dr. Baroux (Armentieres, France) to the use at the same meal of tomato-soup or spinach, followed by some food, such as oysters or game, which has been seasoned with lemon juice. Dr. Baroux contends that the oxalic acid present as a salt in the tomato-soup or the spinach is liberated as a free acid by the citric acid of the lemon, and proves irritating to the gastro-duodenal mucous membrane. He cites several cases in support of his opinion.

Watson ("Practice of Medicine") says that persons whose "urine is charged with crystals of oxalate of lime are, for the most part, exceedingly sensitive and irritable, hypochondriacally apprehensive of impending evil, full of gloomy fears concerning their bodily and mental powers, dyspeptic, weak, and usually emaciated." This description, however, must be intended to apply to extreme cases, for in both adults and children slight cases present no symptoms whatever. When the oxalic diathesis is strongly marked Dr.

Prout says that "the skin is apt to assume an unnatural appearance, yellow in the sanguine, to dark olive or livid in the melancholic temperament." This condition of the skin is much more likely to appear in persons subject to oxaluria, if they partake freely of fruits or vegetables which contain oxalic acid. Dr. R. F. Williams (Sajous' "Annual and Analytical Cyclopedic of Practical Medicine") argues that the functional nervous irregularity noticed in patients with oxaluria may or may not be so great as to produce general nervous symptoms, and that if these are present they are not necessarily caused by the oxalates. 2. That the conditions causing the appearance of oxalates in the urine may produce symptoms closely simulating the constitutional symptoms of Bright's disease. 3. The excretion of oxalates by the kidney for a short time may occasion no local disturbance of that organ; but if continued may, by irritation, cause the appearance of albuminuria and casts with lessened urine, corresponding to the urinary symptoms of Bright's disease, and, if unchecked, may lead to permanent disturbance of kidney tissue. He also thinks that in all suspicious cases in which the nephritic symptoms are accompanied by the appearance of oxalates in quantity, diagnosis should be held in abeyance and the oxaluria be overcome by appropriate remedies to exclude this as a possible cause of the symptoms, before making a positive diagnosis and pronouncing a necessarily hope-dispelling prognosis.

A practitioner may be puzzled by the persistent appearance of a small percentage of albumen in the urine of a patient, who does not exhibit any symptoms of Bright's disease; but he may overlook the persistent presence of crystals of oxalate of lime in the patient's urine, or he may be unaware of their presence.

In examining a specimen of urine from a patient who suffers from oxaluria, one remarks that unlike urine of a phosphatic character, it is generally bright and clear, and unlike that containing urates it is remarkably free from sediment.

The octohedral crystals of oxalate of lime, from their transparency and their having nearly the same refractive power, and nearly the same specific gravity with the urine in which they exist, do not frequently disclose themselves to the naked eye nor sink down in manifest deposit. They are made plainly visible by a high power of the microscope, most commonly as minute, regular, highly refractive octohedra, and more rarely as hour-glass, dumb-bell-shaped crystals.

According to Dr. Prout, the formation of oxalate of lime within the body depends either upon the non-assimilation of oxalic acid taken with the food or the mal-assimilation of saccharine aliments. Hence, in addition to the fruits and vegetables already mentioned, sugar and other saccharine substances, as well as all kinds of fermented liquors, should be excluded from the diet of patients who suffer from oxaluria. They should also avoid the use of hard water, which contains a great deal of lime. Such persons should, as a rule, use a diet of meat and the stronger farinaceous foods, and, if a stimulant is required, whiskey and water should be taken instead of beer or wine. De Domenicis says: "In oxaluria, associated with functional disturbances of the stomach, an exclusive meat diet causes this condition to disappear completely. It is probably due to some toxin."

The nitro-hydrochloric acid, which is a powerful oxidizing agent, has been used in the treatment of oxaluria, and it is probable that its generally recognized utility in this condition is due to its power of oxidation. The stronger acid is recommended by Anders in 2-drop doses; but owing to its corrosive action on the teeth a patient should be warned to take it through a glass tube. This acid taken alone, or in a mixture with bitter tonics such as tincture of orange and tincture of *nux vomica*, answers admirably as "a pick-me-up" (Brunton). In persons of the gouty habit, in whose urine oxalates and urates not unfrequently appear together or in alternation, colchicum assisted by sulphate of magnesia will remove the toxins and dispel, for a time at least, the funereal gloom of oxaluria.

J. J. C.

PRESIDENT McKINLEY'S DEATH.

It would be futile to condemn the murderous attack made on Mr. McKinley, President of the United States, at the Pan-American Exhibition, in Buffalo, on the 6th ult. A political assassination does, occasionally, present redeeming features. The assault made by Czolgosz is bereft of any exculpatory significance, and seems to have been actuated by a cruel determination on the part of the murderer to kill the beloved ruler of a free people simply because he was a ruler; to exhibit the dastardly selfishness and inane inconsequence of anarchy, which glories in defying divine and human laws.

Turning aside from the un'ovely aspect of a human being

devoted to diabolism, the true men of every land might feel a deep sense of satisfaction in the surgical procedure, which so promptly ensued in the Emergency Hospital of the Pan-American Exhibition. The distinguished victim of anarchistic inhumanity was, almost immediately after the attempt, made the beneficiary of an art which aims at undoing the worst that murderous violence can do. Wounded severely by a malicious creature in the form of a man, one who probably had not enough intelligence to understand the mechanism of the weapon he used, President McKinley had the highest resources of surgical skill placed at his service to restore the lacerated tissues into a semblance of their natural continuity, and to prevent, as far as could be, the direful consequences of traumatism and bacterial invasion.

Floreat Medicina! May she ever be, as she is and has been, the truest friend and sweetest solace of outraged, injured, suffering humanity!

Although well planned and skilfully performed, the operation done to save the President's life, unfortunately, proved unavailing. President McKinley expired on the morning of the 14th ult., his death, as revealed at the autopsy, being due to traumatic gangrene. Owing to advancing age and weakness, the wounded tissues of the body failed to respond with the reparative effort required of them—an effort which might have proved too great even for the powers of a younger and stronger man.

J. J. C.

EDITORIAL NOTES.

The Census of Canada for 1901.—The decennial census of Canada reveals a population of 5,340,000, a rather meagre showing for so large a territory. It had been expected that the population would reach the 6,000,000 figure, but the wish must have been father to the thought. There has been, it is true, considerable migration from the older provinces to the northern and western parts of the Dominion, causing losses and gains, and something like an exodus to the United States. The Canadian population of the United States is quoted at figures ranging from 1,000,000 to 1,500,000. Emigration to the United States is, therefore, a potent factor in reducing the population of this country, and, unfortunately for Canada, the flower of our people, the young and vigorous, the very life-blood of this country, abandon it for the United States.

There is another explanation offered for our small population, which, if true, places a stigma on a portion of our population, because such gain in population as there is to record is notably greater in the French-Canadian Province of Quebec. This will appear from the following figures :

	Marriages.	Births.	Deaths.
Ontario, 1899.....	16,514	44,705	28,607
Quebec, 1898.....	10,788	60,345	31,871

Thus in Ontario in the year 1899 there were :

Births	44,705
Deaths.....	28,607
Gain.....	16,098

In Quebec in 1898 there were :

Births	60,345
Deaths ..	31,871
Gain	28,474
Ontario gain.....	16,098
Leaving a balance in favor of Quebec of.....	12,376

It is quite evident, therefore, that, despite the attractions of the United States, Quebec, with a smaller population and a lower marriage rate, can show a greater increase than Ontario. The French-Canadians are not the only people to increase in this sparsely-settled country ; but if all Canadian wives were as fruitful as those of the French-Canadian race, the Canadian census of 1901 would not require the deprecatory comment with which it has been received.

Diphtheroid Sore Throat.—In a paper read before the Congress of Learned Societies convened at Nancy, France (April 11th, 1901), Dr. Aimar Raoult described a form of ulcerated tonsil with formation of membrane, which had also been described as “diphtheroid angina with fusiform bacilli” by Vincent (*Ann. de l'Institut Pasteur*, 15 Aout. 1889). Clinically, he observes that the patients complain of pain on swallowing, inability to work and some fever at night. A greyish-colored false membrane appears generally on one tonsil. If the false membrane is removed, the underlying mucous membrane bleeds and an ulcer forms. Small ulcers also appear on the other tonsil. Both tonsils are swollen and the patient's breath is offensive. The submaxillary glands are enlarged and tender. A varicose condition of the pharynx is observed

in some of the cases. Raoult thinks that these inflammatory phenomena are due to an unhealthy condition of the oral cavity, pyo-gingivitis being frequently observed in these cases. Bacteriologically, the false membranes are found to contain numerous fusiform bacilli and many spirilla of large dimensions. The treatment consisted in making local applications of tr. iodine to the ulcerated surface and prescribing gargles of chlorate of potassium, etc. The ulceration healed rapidly after the patients had spent a few days in the pure air of the country.

Total Extirpation of the Prostate for Enlargement of that Organ.—A valuable paper has appeared in the *British Medical Journal* (July 20th, 1901), by Dr. P. J. Freyer, of London, Eng., describing his operation for total extirpation of the prostate in cases of enlargement of that organ. After a suprapubic cystotomy the prostate is enucleated in its capsule from the surrounding sheath and then stripped off the urethra, which with its enveloping tissues is left intact. The fibrous bands, which pass between the sheath of the organ and the true capsule, are torn through, but the prostatic plexus of veins and large branches of arteries are left behind, only the smaller vessels passing to and from the prostatic substance through the capsule being severed. It seems to be a much more logical proceeding than the various prostatectomies, which have been described, the hemorrhage being trifling in Freyer's operation in comparison with the profuse bleeding that sometimes occurs in a prostatectomy, when the prominent parts of the bladder are cut, or torn off by forceps, the large veins and arteries being thus opened up. Four cases are reported, all of which recovered with good expulsive power. The specimens all proved to be adenomata. Should Freyer's operative success be confirmed by that of others, this operation may be considered a great advance in the surgical art.

Tubercular Meningitis in the Adult.—Cases of tubercular meningitis are occasionally noted in adults, and the diagnosis of this disease would be more frequent if a bacteriological examination of the spinal fluid were made in suspected cases. Dr. Souques reported to the Academy of Medicine, Paris, July 2nd, the case of a man twenty-nine years of age, who had suffered from two separate attacks of right hemiplegia. This patient had nursed his wife, who died of pulmonary consumption, and had suffered from a left, chronic rhinitis. An examination of his spinal fluid obtained by lumbar puncture revealed a tubercular meningitis. Guinea-pigs

inoculated with this spinal fluid developed tuberculosis. The patient died, but the pathological condition could not be verified as an autopsy was not obtained. Dr. Bourcy observed a case of tubercular meningitis commencing with sudden delirium, assuming very much the appearance of delirium tremens. An examination of the spinal fluid enabled him to make an accurate diagnosis. Other cases of tubercular meningitis in the adult were mentioned by Dr. Faisans.

Room for Discoveries in Medicine.—Although medical science advances so rapidly that Dorland has introduced into the second edition of his illustrated medical dictionary (A.D. 1901) 100 new, important terms, which have appeared in medical literature during the past few months, still there is ample room for discovery in medicine. In his presidential address to the Society of French-speaking alienists and neurologists who met at Limoges, France, August 1st, 1901, Dr. Gilbert-Ballet instances certain discoveries which would be welcomed. Thus: "Are there not in the cerebral cortex entire territories, the functions of which we are quite ignorant of? And are we fully informed as to the connections and offices of the central ganglia and of all the parts of the pons varolii? Do we know by what intimate mechanism a centripetal current is changed in the neurons into a centrifugal one, and is not that phenomenon the most elementary, and consequently, the most general of the nervous system?"

Acetic Acid as an Antidote to Carbolic Acid.—We notice in the *Indian Lancet*, of Calcutta, an article by Hospital Assistant Dhurni Dur, Dispensary Dig, Bharatpur State, Rajputana, in which the writer mentions the beneficial effects of an application of diluted acetic acid to burns caused by carbolic acid. He says: "Afterwards I painted four layers of strong carbolic acid on the back of my hand and applied a piece of cotton wool soaked in dilute acetic acid to see the result. In three minutes the burning pain disappeared, while in forty-five minutes the white mark also disappeared, leaving only a little redness behind." He thinks it might be of use when carbolic acid is drunk in mistake. Equally beneficial results in burns from carbolic acid have been obtained by Dr. Seneca Powell, of New York, from the local application of strong alcohol.

Dr. Manley, President of the New York County Medico-Pharmaceutical League.—We have received a copy of the *Journal*

of the New York County Medico-Pharmaceutical League, which is the first New York journal owned by a medical society and the only medico-pharmaceutical periodical in existence. We notice with pleasure that our esteemed collaborator, Dr. Thos. H. Manley, is President of the League. His name is also mentioned as a most eligible candidate for Chairman at the next election of the Academy of Medicine (New York). Dr. Manley has won glory and merits it. Should he attain a high position we feel persuaded that he will use the influence incidental to his office with wisdom and discretion.

DR. HARLEY SMITH, Spadina Avenue, has been appointed Italian Consul for the city of Toronto.

AMONG the city physicians who are riding to hounds this season are Drs. D. K. Smith and W. A. Young.

DR. GEO. ELLIOTT has resigned the position of Assistant Secretary to the Ontario Medical Association.

DRS. D. C. Meyers and G. A. Peters are two of the city medicos who have taken up polo as a Fall recreation.

DRS. Gilbert Gordon and J. S. Hart, of this city, returned two weeks ago from Winnipeg and the West.

DR. S. H. WESTMAN, of Spadina Avenue, was married on September 17th to Miss E. May Pugsley, of Toronto.

H. B. ANDERSON, M.D., L.R.C.P. (LOND.), M.R.C.S. (ENG.), begs to announce that he has removed to 34 Carlton Street, Toronto.

DR. A. T. STANTON, late house surgeon of the Toronto General Hospital, has been appointed surgeon on the C.P.R. steamer *Empress of China*, plying between Vancouver and Hong Kong.

DR. S. M. HAY, of Toronto, and Dr. A. H. Perfect, of West Toronto Junction, spent the last two weeks in June at Johns Hopkins Hospital, Baltimore. They were the guests of Dr. T. Cullen while there and greatly enjoyed their visit.

DR. SHEARD, Toronto's able Medical Health Officer, when recently commenting upon the question of vaccine lymph, said: "We now use dry vaccine on ivory points, obtained from Dr. Stewart's farm at Palmerston. Last year we had over 8,000 vaccinations, and from 96 per cent. to 98 per cent. of these were successful."

The Physician's Library.

BOOK REVIEWS.

A *Treatise on Orthopedic Surgery*. By ROYAL WHITMAN, M.D., Instructor in Orthopedic Surgery and Chief of the Orthopedic Department of the Vanderbilt Clinic in the College of Physicians and Surgeons of Columbia University; Adjunct Professor of Orthopedic Surgery in the New York Polyclinic; Assistant Surgeon and Chief of Clinic at the Hospital for Ruptured and Crippled; Orthopedic Surgeon to the Hospital of St. John's Guild; Member of the Royal College of Surgeons of England; Member and sometime President of the American Orthopedic Association; Corresponding Member of the British Orthopedic Society; Member of the New York Surgical Society, etc. Illustrated with 447 engravings. Philadelphia and New York: Lea Brothers & Co. 1901.

A careful examination of this volume will give the reader an excellent view of the scope of modern orthopedic surgery. In the variety of subjects dealt with it is perhaps more complete than any other work on orthopedics. The author has not encroached upon other fields, but, devoting himself to a discussion of those diseases and deformities which his experience as a specialist have shown him come within the boundaries of orthopedic surgery, he incidentally reveals how wide these boundaries have become and what marvellous advances have been made within the comparatively short time which has elapsed since this field was transferred from the surgical machinist to the trained surgeon.

As might be expected, a large part of the book is devoted to tubercular disease of bones and joints. The various phases of this vastly important subject are well presented, and it may be said that the author successfully avoids extremes, and that on the whole his practice represents the best modern experience in this branch of orthopedic surgery. An unfortunate oversight in this part of the book is that the *general* treatment of patients suffering from tuberculosis of bones and joints is scarcely referred to. At the present day, when fresh air, sunshine, good food, and other measures for general invigoration and increase of resisting power have assumed such deserved prominence in the treatment of tuberculous conditions, one would expect that these matters would receive emphasis instead of being almost wholly neglected.

In connection with lateral curvature of the spine, the illustration appearing on page 179 is far from convincing. The patient should have been photographed in the Adams' position.

Those who appreciate brevity will be pleased to find a number of chapters in which the chief points of subjects of relatively minor importance are pleasingly presented in condensed form. Chapters 2, 6, 10 and 13 may be especially mentioned in this connection.

In chapter 19 will be found a very satisfactory, though brief, discussion of congenital and acquired torticollis.

It is quite evident that the author's experience tallies with that of many others in regard to the usefulness of massage, for its value in a variety of conditions is frequently referred to.

We are glad to find the author taking strong ground in regard to the necessity of more or less constant supervision of patients suffering from disabilities and deformities resulting from paralysis and diseases of the nervous system. Because such cases cannot be "cured" in the sense of perfect restoration to the normal condition they are too often considered beyond help and are entirely neglected. Speaking of such cases, Dr. Whitman says (p.458): "Careful supervision of the patient, even though the weakness is not great, will be necessary during the period of growth. The contrast between the development and symmetry, the muscular power and practical utility of a limb that has received this care and supervision, and one that has been neglected, is sufficiently striking to impress one with the necessity for this tedious and apparently never-ending treatment."

Knowing the particular interest taken by the author in the weak foot (flat-foot), one naturally turns to the chapter on this subject expecting it to be one of the most satisfactory in the book. This expectation is somewhat disappointed. Practically all authors, in writing of the foot, leave the reader in painful uncertainty as to the exact sense in which they use such terms as adduction, abduction, pronation, supination, varus, valgus, inversion, eversion, etc.; but in the volume under review some of these terms are employed in such a way as to be more than ordinarily distracting. The attempt to make the terms used to describe distinct elements of deformity synonymous, because these elements usually exist in combination, cannot fail to create confusion. It is evident that even the author has some misgivings as to the clearness of his definition of some of these terms, for after various explanations of their significance he introduces on page 516 the following explanatory foot-note: "As abduction and supination, and adduction and pronation are always combined, one term is used to signify the movement inward or outward; thus, supination means adduction, adduction implies pronation. A fixed attitude of adduction and supination is called varus, a fixed attitude of abduction and pronation is called valgus. Varus and valgus signify, therefore, deformity. Thus the term valgus, although it may be properly applied to designate the deformity of weak foot, is usually

reserved for the more extreme distortion of talipes." Even this foot-note is hardly remarkable for perspicuity, however.

Further, the author would have done himself greater justice in this chapter by exercising more care at times in describing the mechanics of the human machine. For example, on page 495 we find the following: "The second function of the foot is as a lever to raise and propel the body. The calf muscles supply the power and the heads of the metatarsal bones serve as the fulcrum on which the weight is to be lifted."

It is not true that the heads of the metatarsal bones serve as a fulcrum. They form one extremity of the lever, the fulcrum being the ground. The fulcrum is no part of the lever; it is something outside of it. This same error occurs in different form on pages 502 and 521.

It must be admitted, however, that even if some looseness and confusion and a few contradictions have crept into the author's discussion of the weak foot, his directions as to its treatment are beyond question the most complete and satisfactory to be found in any text-book. It may be truthfully said that "Whitman's Orthopedic Surgery" is a valuable addition to the library of the specialist as well as that of the general practitioner. Of 447 illustrations the vast majority are original. The publishers have executed their work admirably.

H. P. H. G.

Matière Médicale Zoologique. Histoire des Drogues d'Origine Animale. Par H. BEAUREGARD, Professeur à l'École Supérieure de Pharmacie de Paris, Ancien Assistant de la Chaire d'Anatomie Comparée, au Muséum d'Histoire Naturelle Membre de la Société de Biologie. Révisé par M. COUTIERE, Professeur Agrégé chargé de Cours à l'École de Pharmacie. Avec préface de M. D'ARSONVAL, Professeur au Collège de France, Membre de l'Institut. Paris: Ancienne Librairie G. Carre et C. Naud. C. Naud, Éditeur, 3 Rue Racine. 1901.

This book is admirably fitted to give clear ideas on the zoology of the materia medica; but in looking it over one is forcibly reminded of the truth of the old adage, "Times change, and we change with them." To illustrate: The leech, now so little used, was, during the first half of the nineteenth century, very extensively employed in medical practice. A physician and a leech were synonymous words, and the art of medicine was known as leechcraft.

Dr. Beauregard tells us that in France, during 1820, 183,000 leeches were purchased for use by the central pharmacy of the hospitals; in 1834, 1,030,000, and in 1837, 1,037,000. In 1874 the number purchased fell to 49,000, and at the present time only a few hundreds are purchased.

Of course Dr. Sangrado is now very seldom seen, and, if vivisection is ordered, wet cups are equally effective, and much more cleanly than leeches. Then, owing to the fact that leeches can be made to disgorge and afterwards do duty on another patient, it is

thought that they may occasionally have helped to propagate contagious diseases, especially when one remembers the important parts played by mosquitoes and bed-bugs in propagating malarial fevers, and by rats in extending the contagion of plague.

A considerable change in surgical practice is the use of sponges made of absorbent cotton, enclosed in gauze, and rendered aseptic by boiling, in place of the time-honored surgical sponges. Even the sponge-tent is no longer looked on with favor.

It makes one smile to think, that formerly burnt sponge was used in order to obtain the therapeutic effects of iodine in diseases such as goitre and scrofula. Sponges were heated in closed vessels until they assumed a brown tint, the heating being done carefully so as not to volatilize the contained iodine.

The article on the sperm whale is well written and beautifully illustrated.

The same remark applies to the article on cantharides, the illustrations by Prieur and Dubois, Puteaux, being faithful reproductions of the natural insect.

The article on the beaver will be interesting to Canadians—Beaver in English, in Latin *Fiber*, in German *Biber*, in old French *Bièvre*; hence the name of the stream which runs through the southern part of Paris, the banks of which were formerly inhabited by beavers. Therapeutically, however, castoreum has ceased to be of any interest, and it has been omitted in the last two editions of the British Pharmacopeia (1885 and 1898). Students who wish to have accurate ideas of the anatomical structure of organs, or parts of the animal structure mentioned in works on *materia medica*, viz., *spermaceti*, *ol. morrhue*, *moschus*, etc., would do well to procure this book. It ought to be translated into English. J. J. C.

Operative Surgery. By JOSEPH D. BRYANT, Professor of the Principles and Practice of Surgery, Operative and Clinical, University and Bellevue Hospital Medical College, etc., etc. Vol. II. Operations on Mouth, Nose, and Esophagus; the Viscera connected with the Peritoneum, the Thorax and Neck, Scrotum and Penis, and miscellaneous operations. With 827 illustrations, of which 40 are colored. New York: D. Appleton & Co. Canadian agents: The George N. Morang Co., Limited, Toronto.

Chapter XIII. of Volume II. is devoted to operations on the mouth, pharynx, nose and esophagus and should prove invaluable not only to the specialist, but also to the general surgeon who dabbles in work of this kind.

The next chapter, devoted to operations on viscera connected with the peritoneum, is comprehensive, carefully written, and up-to-date. It covers abdominal surgery in all its branches, and will prove instructive reading to anyone engaged in this line of work.

Operations on the anus and rectum are dealt with in chapter XV. In this chapter we are pleased to notice a full description

of Peters' method of dealing with procidentia recti. This is undoubtedly one of the best, if not the best, method yet described, for it practically makes recurrence anatomically impossible. Operations on the thorax include excision of the breast, thoracentesis, thoracotomy, aspiration, thoracoplasty; operations for necrosis, wounds and hernia of the diaphragm, lung surgery, etc.

The next chapter deals with operations on the neck. Chapters XVII and XVIII. deal with operations on the bladder and on the scrotum and penis respectively, while under the heading, "Miscellaneous Operations," we find described psoas abscess, suture of the patella, rupture of the tendon of the quadriceps extensor, suture of the olecranon, the union of fractured bones, movable bodies in joints, frontal sinus, etc., and operations on the cervical sympathetic.

After a perusal of the book one cannot but congratulate the author on his work. The book-making, too, is like all of the D. Appleton & Co., excellent.

F. N. G. S.

The American Illustrated Medical Dictionary. A new and complete dictionary of the terms used in Medicine, Surgery, Dentistry, Pharmacy, Chemistry, and the kindred branches, with their pronunciation, derivation and definition, including much collateral information of an encyclopedic character. By W. A. NEWMAN DORLAND, A.M., M.D., Assistant Obstetrician to the University of Pennsylvania Hospital; author of the American Pocket Medical Dictionary; Fellow of American Academy of Medicine. Together with new and elaborate titles of arteries, muscles, nerves, veins, etc.; of bacilli, bacteria, diplococci, micrococci, streptococci, ptomaines, and leukomains, weights and measures: eponymic tables of diseases, operations, signs and symptoms, stains, tests, methods of treatment, etc. Second edition revised. Philadelphia and London: W. B. Saunders & Co. Canadian agents: J. A. Carveth & Co., Toronto, Ont. Price \$4.50 net. 1901.

We are indebted to the publishers for a copy of this very handsome and decidedly useful book. The author has evidently decided from experience that a students' medical dictionary is not just what the practitioner wants, and that a lexicon of encyclopedic proportions is rather too large for office use. The fact that a second edition has been promptly called for shows that Dorland's Medical Dictionary is approved of by the profession. Important new terms that have appeared in recent medical literature have been included in the present work. The illustrations showing the distribution of the nerves are very graphic. The typography is excellent. The book is bound in limp covers, and will be found to be a very handy and instructive desk companion.

J. J. C.

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Original Contributions.

"THE PASSING OF THE SURGEON" IN TORONTO.*

BY F. N. G. STARR, M.B. (TOR.),

Associate Professor of Clinical Surgery : Demonstrator of Anatomy, University of Toronto.

Gentlemen of the Toronto Medical Society:

Since your courteous and self-sacrificing natures have put me in the President's chair, it would ill befit the present occasion if I did not most heartily thank you for the honor—for honor I esteem it—conferred upon so humble a member of our fraternity, in placing me as you did in this unsought-for position.

Upon finding myself enjoying such unenviable prominence, I began to look about me for a subject upon which to address you this evening. I looked to the progress of medicine, and of surgery, and found them worn well-nigh threadbare with over-repetition. In review I passed over such topics as the duties of the medical man as a citizen, the question of medical education, and of medical defence, the surgery of the olden times, and the prevention of tuberculosis and its concomitant wrangles of interested parties with axes to grind. For some time the question of medical ethics held me, for I thought I could call attention to a few matters of daily occurrence that tend to diminish rather than to elevate the dignity of the profession, but I feared it might be unbecoming in one so young to undertake the teaching of his seniors, for although one calls to mind the instruction, "A little child

*President's address at the opening meeting of the Toronto Medical Society, October 3rd, 1901.

shall lead them," one hesitates, in these latter days, to play the role of the little child.

Were I to give a history of the medical profession in Toronto, I fear that my prolixity would weary you. I therefore shall try to give you a few pen pictures of "the passing of the surgeon," describing with as much brevity as the occasion will permit some of the men who attained to a degree of prominence in surgery in Toronto, and see if we may not learn some lessons from a study of their lives—"Lest we forget—lest we forget!"

It will be interesting to you to know that the profession in this city has always been held in high esteem, and deservedly so. As far back as 1850, Clarke Gamble writes: "My opportunities of forming a correct opinion of the medical confraternity during the period referred to are, in consequence of my position, very good—nay, excellent; and I can bear clear, unequivocal testimony to them as a class. And I assert that nowhere could be found a better educated, more skilful, kind, courteous and attentive set of medical men than our community has been blessed with from 1820 to the present time."

From my perusal of a number of works I have learned that medical men rarely become rich in this world's goods, but if one may judge from the records of the historian of their kindness to the poor, many are now reaping rich rewards at the hands of the Great Paymaster.

Many of the men of the past were well cultured, with clear intellects, and of good social standing. Surely we might emulate them in this, for too often in these latter days, with the rush and bustle of a busy life, we neglect the social amenities. If one would but remember that many a boy takes his family doctor as his model, surely he should endeavor to be a model worthy the copy. Many were military men, and a goodly number followed politics as a pastime. Many of them, too, had what Napoleon aptly calls "the two o'clock in the morning courage," for some have even laid down their lives for their patients. I refer particularly to the late Dr. George R. Grasset, uncle of Dr. Fred. Grasset, and to Dr. Hamilton, who contracted typhus during the epidemic of 1847 and who were laid in the martyrs' grave.

I have found here and there on the historic pages accounts of some who advertised freely, lauding their personal talents in the public press of the day. I may say, so far as I can learn, that these men never attained eminence. The giants of the profession in the past did not herald through the public press every trivial operation performed.

It seems befitting that this chronicle should begin with a brief account of Dr. James Macaulay, as his association with Upper Canada began with Colonel Simcoe, its first Governor in 1792.

He was a native of Scotland, born in 1759, and held the

degrees of M.D., and of M.R.C.S.(Eng.), and died at York (now Toronto) January 1st, 1822.

He was senior member of the Medical Board of Upper Canada, organized in 1819; was Surgeon to the 33rd Regiment, and afterward to the Queen's Rangers, Simcoe's own battalion; subsequently he was made Deputy Inspector-General of Hospitals. Some time between 1794 and 1796 he moved to York (now Toronto). His name appears first on the list of Commissioners to oversee the opening of Yonge Street, and in 1803 he was one of a "committee appointed to proceed with the work of building" a church.

He received a patent for a park lot extending from Yonge Street to University and from Queen to College. Near the S. E. corner some lots were laid out and buildings erected, and this part became known as Macaulay Town—the western boundary of York extending then only to George Street. It may be interesting to mention that James Street gets its name from his Christian name, and Elizabeth Street from that of his wife. The homestead was situated where "Trinity Square" now is, and was known as "Teraulay Cottage." The name was formed from the last syllable of his wife's name, Hayter, and from the last two of his own. Teraulay Street doubtless commemorates this romantic name.

He was a man of striking appearance, of medium height, and of fair complexion. Though not actively engaged in practice after the severance of his connection with the army, he did much for the welfare of the medical profession in those early days.

Grant Powell was born in Norwich, England, in 1779, and died at York (now Toronto) in 1838. His father was William Dammer Powell, who afterwards became Chief Justice of Upper Canada, and who presided at the celebrated trial at Niagara immediately preceding the rebellion of 1837. The subject of our sketch was a "Guy's" man. He practised in New York State from 1804 to 1807, and then removed to Montreal, where he remained until 1812, when he came to York (now Toronto) as Surgeon to the Incorporated Militia. Though a surgeon of no mean ability, he virtually retired from active practice when Dr. Widmer settled here. He was one of the early members of the old Upper Canada Medical Board. His son, Grant Powell, is still living in rude health at the age of 82. His grandson, our mutual friend Dr. R. W. Powell, of Ottawa, is the only descendant who followed the profession of medicine.

Christopher Widmer, M.D., F.R.C.S.(Eng.), was born in England about 1780, and died at Toronto, May 2nd, 1858. He served during the Peninsular War as surgeon to the 14th Light Dragoons, and came to Canada with his regiment during the War of 1812. Settling in York (now Toronto) about 1815, he took up his resi-



DR. CHRISTOPHER WIDMER.

dence on Ontario Street, between King and Front Streets. Widmer's name will go down to posterity as the father of surgery in Upper Canada. "His skill," according to Canniff, "was equal in making a diagnosis, in deciding when to operate, and in handling the surgeon's knife or other instrument." According to Clarke Gamble, Widmer and his partner Deihl practically had the whole practice of York and its neighborhood for many years.

He was ever a regular attendant at the Hospital, and always had a large following of students, who held him in high esteem, while laughing at his brusque ways and his frequent expletives; while he was ever ready to give his best skill to the poor *gratis*, if he suspected some well-to-do person of trying to obtain his services gratuitously, his language was such that no printing press could bear the strain of reproducing it.

Scadding, in "Toronto of Old," in speaking of him says: "It is to be regretted that Dr. Widmer left behind him no written memorials of his long and varied experience. Before his settlement in York he had been a staff cavalry surgeon, on active service during the campaigns in the Peninsula. A personal narrative of his public life would have been full of interest. But his ambition was content with the homage of his contemporaries, rich and poor, rendered with sincerity to his pre-eminent abilities and inextinguishable zeal as a surgeon and physician. Long after his retirement from general practice he was every day to be seen passing to and from the old hospital on King Street, conveyed in his well-known cabriolet, and guiding with his own hands the reins conducted in through the front window of the vehicle. He had now attained a great age, but his slender form continued erect; the hat was worn jauntily as in other days, and the dress was ever scrupulously exact; the expression of his face in repose was somewhat abstracted and sad, but a quick smile appeared at the recognition of friends. The ordinary engravings of Harvey, the discoverer of the circulation of the blood, recalls in some degree the countenance of Dr. Widmer."

Peter Deihl was born at Quebec in 1787, and died in Toronto of some internal injury, the result of a fall, on March 5th, 1858.

He studied with Dr. Charles Blake, of Montreal, and then went to Europe for post-graduate work, returning to Canada in 1809. From 1813 till the close of the war he served with the Canadian Regiment, and returned to England in a transport. In 1818 he came again to Canada, and for the next ten years resided at Montreal, having been connected with the General Hospital there. In 1828 he removed to York (now Toronto), and soon after became a partner of Dr. Widmer. He was a man of quiet, pleasant manner and gentle disposition, and a good surgeon. Because of ill-health the partnership was dissolved in 1835, after which he travelled for a time. Returning a year later, he built a



DR. JOHN ROLPH.

residence on Lot Street, near where the Canadian Institute now stands. During the Rebellion of 1837 he was surgeon to the 41st Battalion of Militia under Colonel Hill.

John Rolph was born at Thornbury, England, March 4th, 1793, and died at Mitchell, Ont., October 19th, 1870. He began practice in York (now Toronto) in 1831, and lived in Macaulay Town, about where the present City Hall stands. He became a member of the Medical Board in 1832, was one of Toronto's first aldermen after incorporation, and aspired to the Mayor's chair, but finding this impossible he resigned, to pave the way for Wm. Lyon Mackenzie.

In many ways he was a remarkable man. Finding medicine too circumscribed he became a barrister as well, and it is said that at one time he turned his attention to divinity and contemplated taking orders.

He was closely associated with Wm. Lyon Mackenzie in the rebellion in 1837, and, warned by the late H. H. Wright, then a pupil of his, after the failure of the attempt to take Toronto, he made his escape to the United States. A reward of £500 was offered for his apprehension. During his exile he practised in Rochester until 1843, when he, with others, was allowed to return. The late Dr. H. H. Wright and Dr. J. H. Richardson were pupils who studied with him in Rochester. In 1848 he started the Toronto School of Medicine, and I have been told by the late Dr. Aikins that he would begin at 8 a.m. and lecture on four different subjects in a morning. In 1853 the school was incorporated, the staff having been increased as the number of students multiplied.

My time prevents me from going further into a description of this remarkable man, more than to quote from Dent that he was a man of "a comprehensive, subtle intellect, high scholastic and professional attainments, a style of eloquence which was at once ornate and logical, a noble and handsome countenance, a voice of silvery sweetness," etc.

William Rawlins Beaumont, M.D., F.R.C.S. (Eng.), was born in Beaumont, St. Marylebone, London, in 1803. He pursued his medical studies at "Bart's" and was a dressing pupil of Abernethy. He came to Canada in 1841. In 1843 he was appointed Prof. of Surgery in the University of King's College (now University of Toronto), which post he held for ten years until the abolition of the Medical Faculty, of which he was Dean. He became a member of the Medical Board of Upper Canada in 1845, and took an active interest in the welfare of the profession. In 1870-71 he delivered a course of lectures on Ophthalmic Surgery in the Toronto School of Medicine, and Clinical Lectures at the General Hospital. In 1872 he was elected Professor of Surgery in the Medical Faculty of Trinity College.

Until the time of Aikins he did practically all the surgery that



DR. WM. CHARLES GWYNNE.

was to be done, and for many years afterward the honors were about evenly divided. He was a polished gentleman, an excellent anatomist, and a most finished surgeon, with calm, cool judgment and a delicacy and nicety of operation.

In 1836 he invented and described before the Royal Medico-Chirurgical Society an instrument for passing sutures in deep-seated parts (1), which was greatly admired, and was reputed by Tieman of New York to have been the origin of the Singer Sewing Machine. He invented instruments for tying polypi, a sliding iris-forceps, a speculum, and a probe-pointed lithotomy knife.

He was the author of *Essays on the Treatment of Fractures of the Leg and Forearm by Plaster-of-Paris* (1831), on *Polypi* (1838), *A Case of a large Cartilaginous Tumor of the Lower Jaw* (1850), and contributed *Clinical Lectures on Traumatic Carotid Aneurism* (2), *The Several Forms of Lithotomy* (3), *A Deeply-Penetrating Wound of the Orbit* (5 1-2 inches deep), *Recovery* (4), *Papers on Exostosis of the Scapula*, and *Aneurism of the Femoral Artery*. He made many contributions to the Royal College of Surgeons, England, and to many other collections.

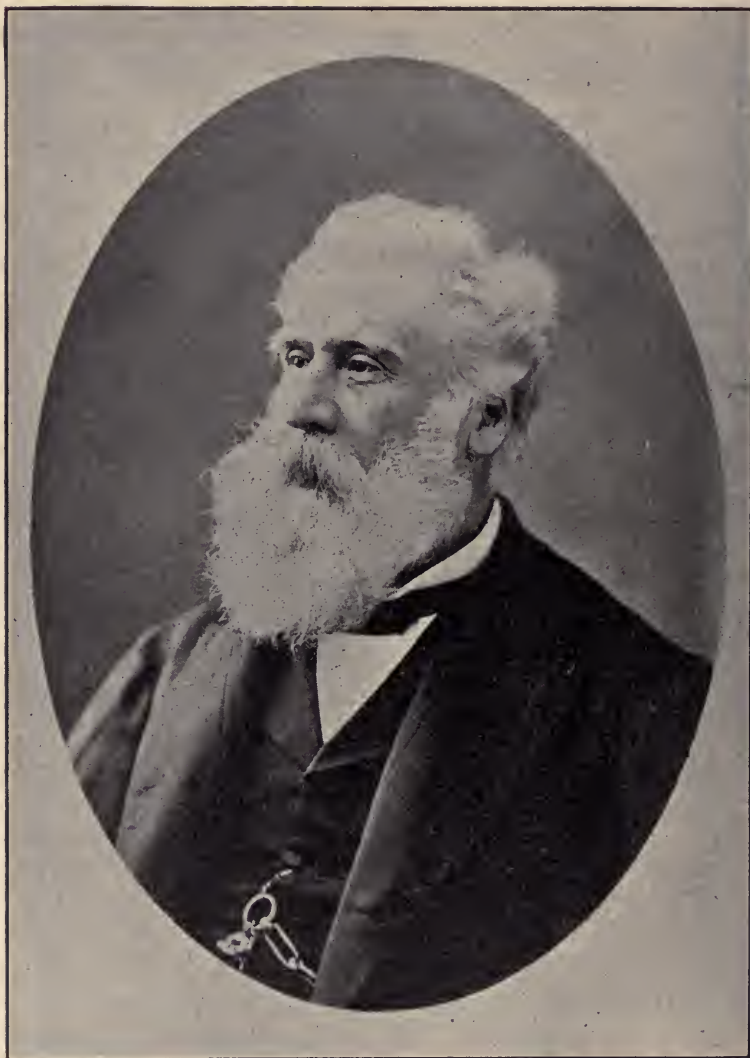
During the Fenian Raid, in 1866, he had charge of the hospital for the wounded at Port Colborne.

In 1866 the sight of the left eye became impaired from acute inflammation, and at length became completely useless; in 1871 the right became affected, and in 1873 he became blind. From then until his death, on October 12th, 1875, he lived in retirement with his family about him.

Wm. Charles Gwynne came as a ship-surgeon to Quebec in 1832, and soon after removed to York (now Toronto) where the cholera was then raging. He entered into his work with enthusiasm and his efforts were oftentimes crowned with success.

He became a member of the Medical Board of Upper Canada in 1838, and always took an active interest in educational affairs. When a student he had learned that blood-letting, then so greatly in vogue, was often unnecessary and even harmful, and as he did not hesitate to express his views, he was oftentimes at loggerheads with his confreres. He was a good diagnostician and a careful surgeon, and when he formed an opinion he held to it with bulldog tenacity. An instance is related of a young man who in a midnight frolic climbed a lamp-post to put out the light. He fell to the ground and sustained fatal internal injury. At the consultation Gwynne alone contended that he had a ruptured liver, and that death would ensue. A *post-mortem* examination verified his diagnosis.

He was instrumental in the formation of the Medical Faculty in the University of King's College, and in the Commission was designated Professor of Anatomy and Physiology. He designed the building for the first medical college in Upper Canada, which



DR. EDWARD MULBERRY HODDER.

was situated to the west of and adjacent to the Parliament Buildings on Front Street. He worked hard and faithfully with his pupils, one of whom was Mr., and afterwards Dr. Small, who for many years was known as one of the leading physicians of Toronto.

The merging of King's College into Toronto University in 1850 only increased his enthusiasm, but when in 1854 the Medical Faculty was legislated away, he lost all interest in medicine and left the country, but returned again after two years. He died in September, 1875.

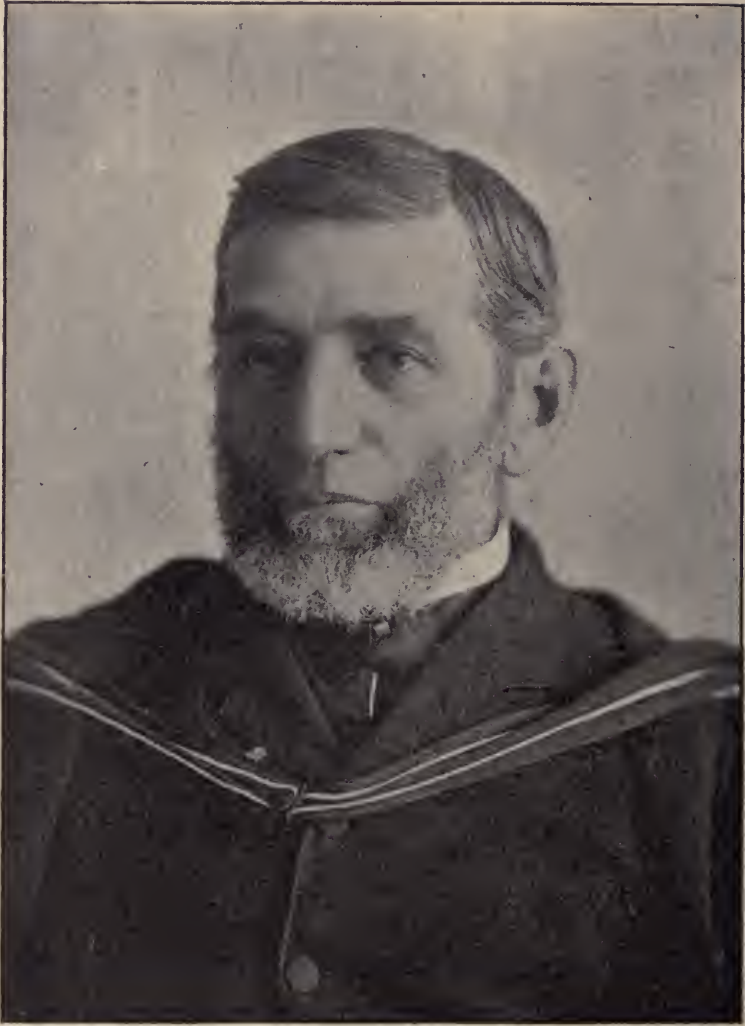
Edward Mulberry Hodder was born in England in 1810, and died at Toronto, February 20th, 1878. As a boy he entered the navy as a "middy," but remained only a year, when he took up the study of medicine. After qualifying as an M.R.C.S. he went to Paris for two years, and then to Edinburgh. He began practice in London, but soon removed to France; finally coming to Canada he settled in Toronto in 1843. The degree of C.M. was conferred upon him by King's College, and that of M.D. by Trinity College in 1845. In 1854 he became a Fellow of the Royal College of Surgeons of England.

In 1850 he, in concert with the late Dr. Bovell—one of Toronto's most eminent physicians—established the Upper Canada School of Medicine, which in the same year became the Medical Department of Trinity College. Afterwards for many years he was a member of the Faculty of the Toronto School of Medicine, but when his old school was again revived in 1870 he was appointed Dean of the Faculty, which post he held until the time of his death. He was on the Active Staff of the General Hospital, and of the Burnside Lying-In Hospital. He was President at different times of the Upper Canada Medical Board, of the Toronto Medico-Chirurgical Society (1862), of the Canadian Medical Association (1875), and represented Trinity Medical College on the Medical Council from 1872 till the time of his death.

Though he was devoted to his profession, he found time for recreation, and was a lover of sailing. He was, I believe, largely instrumental in the formation of the Royal Canadian Yacht Club. Clarke Gamble, in speaking of him, says: "His name was a household word in Toronto; skilful, cautious, affable and handsome, he was a universal favorite, particularly with the gentler sex." He was an able surgeon, and is said to have been the first man in Canada to do the operation of ovariectomy.

An article from his pen on the transfusion of warm milk into the veins of cholera patients has been published (5).

James Ackland De La Hooke came to Toronto in 1839, and received a license from the Medical Board of Upper Canada, being the first to receive its diploma. He afterwards went to Weston, and from there to Goderich, and then to several other places, re-



DR. HENRY HOVER WRIGHT.

turning to Toronto in 1870, where he resided until the time of his death a year or two ago. During his residence on the London Road he operated upon an irreducible compound fracture of the femur, and of the tibia and fibula, by sawing off the projecting ends of the bones, which allowed the parts to come into apposition, and a good result ensued. Many amusing anecdotes are told in Canniff's book, but time will not permit of their telling here.

Henry Hover Wright was born in Prince Edward County, and died in Toronto on the 9th of March, 1899. He began the study of Medicine with Dr. Rolph in 1832, and remained with him till Rolph had to leave the country in 1837. Wright followed him to Rochester and remained a little more than a year. Returning to Toronto in 1839 he got his license to practise. For a short time he lived in Dundas, afterwards in Markham, and in 1853 he came to Toronto and became a lecturer in Rolph's School. During his early years Dr. Wright practised surgery as well as medicine, and had the reputation of doing good work. When, however, he and Dr. Aikins became closely associated in the Toronto School of Medicine, after the split with Rolph, Wright stuck more closely to medicine and Aikins to surgery. We younger men, of course, remember him as a physician, and affectionately recall him as our old teacher, while some of the older men tell us of the operations done in his earlier days. Dr. Wright did much to elevate the standard of the medical profession, and was noted for his honest endeavors and for his tenacity of purpose.

I have met many of his old patients both in and outside of the city, and one and all bear testimony to his kindness, courtesy and self-sacrifice.

His son, Dr. Frederick H. Wright, followed in his father's profession, graduating in 1872 from the University of Toronto, after which he studied at St. Thomas's, where he was a great favorite with Dr. Peacock. After taking the English qualification he became resident physician in the Victoria Park Hospital for Diseases of the Chest. He afterwards practised in Toronto, and was a most skilful diagnostician. His health failed, and he died April 19th, 1882.

Cornelius James Philbrick was born in Colchester, England, in 1816, and died at Toronto, December 2nd, 1885. He was a Fellow of the Royal College of Surgeons of England, and came to Toronto about 1850, settling in what was then known as Yorkville, and residing at the corner of Church and Bloor Streets. He was an able, clever surgeon, and had an accurate knowledge of anatomy. He had many little eccentricities that afforded both his friends and enemies alike many a laugh. In 1852 he was Professor of Surgery in Trinity College. To quote from Canniff's book, "A marble slab covers his grave, on which is inscribed the date of his death, and these words: 'Having practised his profes-



DR. JAMES H. RICHARDSON.

sion in this city with credit and distinction thirty-four years,' and near the foot set in the marble, is the door-plate with the words, 'Mr. Philbrick, Surgeon.'"

Norman Bethune, M.D. (Edin.), M.R.C.S. (Eng.), F.R.C.S. (Edin.), was born at Moose Factory, Hudson Bay, in 1822, and was the son of Angus Norman Bethune, who for fifty years was in the employ of the North-West and Hudson's Bay companies. He died at Toronto, October 12th, 1892.

He entered King's College (now the University of Toronto) in 1843. Afterwards he took post-graduate work at "Guy's" and at King's College, London. Returning to Toronto in 1849, he began practice. For years he was a professor in Trinity Medical College. Bethune was an athletic-looking, well-built man, a perfect gentleman, a finished scholar, a polished surgeon, and an amateur artist of considerable ability, as the sketch before you will demonstrate. The skeleton in the centre is said to represent Widmer; the one to the left King; and the one about to "play the game" is, I think, Herrick.

I am indebted to Dr. O'Reilly for allowing me to have this slide made from a copy in his possession.

William Thomas Aikins, the father of Dr. H. Wilberforce Aikins, was born at Burnhamthorpe, Ontario, in 1827, and died at Toronto, May 24th, 1897. He obtained his medical education at Jefferson, from which College he graduated with high honors and soon after began practice in Toronto. He became a lecturer in the Rolph School in 1850, and the Toronto School of Medicine in 1856. For nearly twenty years he was president of the Toronto School of Medicine, and when in 1887 the University of Toronto took this over as its medical faculty he was made Dean, and deservedly so, for he entered heart and soul into the negotiations, believing that such an arrangement meant much towards the progress of medicine in this Province. He held this position until 1893, when because of failing health he found it necessary to relinquish some of his work. In both institutions he held the post of Professor of Surgery, and was looked upon as one of the ablest surgeons on this continent. As a teacher of the practice of surgery he had few equals, his style was impressive, his advice good, and his methods of teaching practical.

Many a graduate has gone into the backwoods places to practise filled with excellent ideas as to how to deal with surgical emergencies. Associated with him as I was for nearly two years, as a student in his office, and "soop" at the old school, I learned to love him as I would a father and to respect his ability as a surgeon, and as the years rolled on this respect grew and grew. As I remember him, he was kind and unselfish. Many times in later years have we chatted together, and of one theme he never tired talking, namely, that so many of his old pupils were taking lead-

ing places in surgery in this city and Province. Nothing pleased him more than to hear of one of his boys having done some new and difficult operation, and many were then doing, for antiseptic surgery was yet in its infancy, and great things were happening daily.

He took an active part in the formation of the Ontario Medical Council, and was its treasurer from the time of its organization. He was at the inaugural meeting of the Canadian Medical Association in 1867. From 1850 to 1880 he was a surgeon to



DR. WM. THOMAS AIKINS.

the Toronto General Hospital, when for some unaccountable reason, known only to the powers that be, he was elected to the "consulting staff." For many years he was surgeon to the Central Prison.

He devised and used the hoop-iron splint for fractures of the humerus (6). He invented a most excellent fracture bed; he devised the idea of using rubber tubing for applying the continuous cold water coil, many years before Leiter ever described

it; in amputations of the breast and in other operations necessitating the loss of a large quantity of blood he used the tourniquets on the extremities as "blood-savers." These were applied in such a way that a large amount of blood was stored in the limbs. Some of the advantages claimed were that the patient required less anesthetic, and then when the operation was concluded, and the patient suffering from shock, first one limb was freed and then another, until all the blood was again in circulation. The patients recovered more quickly from their anesthetic, and there certainly seemed to be less shock. He never wearied of advocating "elevation" in the treatment of hemorrhage, and of inflammation, and was an ardent advocate of a plentiful supply of fresh air in the treatment of all cases. He performed the osteoplastic amputation at the knee-joint, some years before Gritti in 1858 described it, and was the first man in Canada to adopt Lister's views and practise antiseptic surgery. During my time as a student he abandoned the carbolic spray as superfluous. In the carrying out of antiseptic surgery, as you may imagine, he met with much opposition and even with dishonest and underhand treatment, in so far that one man who shall be nameless—and may he rest in a nameless grave—would go to his cases after their removal to the ward and infect the wounds with pus taken from other cases. Unfortunately Aikins never contributed to the journals, otherwise his name would pass down to posterity as one of the big men of the time. I would linger longer only I fear that I have wearied you already.

"Yon rising moon that looks for us again—
How oft hereafter will she wax and wane;
How oft hereafter, rising look for us
Through this same garden—but for *one* in vain."

James Ross, the father of Dr. J. F. W. Ross, entered the Toronto School of Medicine in 1848, and obtained his license to practise in 1851. Subsequently he graduated from Jefferson Medical College.

During the Civil War in the United States he was appointed surgeon to a corps in the Northern Army, and was present at the battle of Antietam. In 1867, during the Fenian Raid, he was Surgeon to the Toronto Naval Brigade.

For several years he was a member of the Medical Board, from 1875 to 1880 of the Medical Council, and for four years he was a member of the Toronto School Board. He died in 1892, at the age of sixty years.

He was a demonstrator of anatomy in Rolph's School. His practice was largely obstetrical, and during his lifetime he attended six thousand, seven hundred and seventy-seven cases of midwifery in private practice. An accurate record of these was kept, and they have since been analyzed and published (7) by his



DR. LACHLIN MCFARLANE.

son. He performed many of the major operations such as amputations, lithotomy, paracentesis thoracis for empyema, and had considerable experience in the treatment of fractures and of gunshot wounds.

He was made President of the Canadian Medical Association at Banff in 1889. During his thirty years' practice in Toronto he was intimately associated with Wright, Aikins and Thorburn, while in his younger days he came in contact with Widmer, Hodder, and Small.

Lachlin McFarlane left his father's house at the age of thirteen, and began work as a clerk in a store in the Township of Caledon, at the same time preparing himself for teaching. At the age of eighteen he took charge of the school at Caledon. During this time he studied for matriculation and finally entered as a student in the Toronto School of Medicine, graduating from the University of Toronto in 1867, and was one of the medallists in his year. He began practice in Toronto, and after meeting with the usual ups and downs of a city practice, about which some of us know a good deal from sorrowful experience, he became one of the busiest men in town. In 1869 he was appointed a demonstrator of anatomy in the old Toronto School of Medicine. In 1885 I well remember him as senior demonstrator, and I remember, too, how we "freshies" would quake when "Lockie" would start a "grind" with, "What have we here?" On one occasion we secured the services of an organ grinder to perform in the dissecting room, and I shall never forget the amused expression on his face, combined with a forced sternness, while he saw that discipline was properly carried out—as well as the organ-grinder and his "hurdy-gurdy." In 1881 he was made visiting surgeon to the General Hospital, and at the reorganization of the Medical Faculty of the University of Toronto in 1887 he was appointed Associate Professor of Clinical Surgery, which post he held until his untimely death from blood-poisoning on February 29th, 1896. He was infected from a needle-prick while amputating some gangrenous toes of a charity patient. As I remember him, he was a short, stout, thick-set man with a genial presence. Socially he was full of "fun" and made many warm friends, while by his patients he was held in affectionate esteem. His funeral was one of the largest ever seen in Toronto—rich and poor alike vied with each other in their efforts to tender to his memory their last respects.

John Fulton was born in Elgin County, and came to Toronto to study medicine in the Rolph School, from which he graduated with high honors in the University of Toronto and Victoria College in 1863. After spending some time in post-graduate work, in England, he returned to Toronto. He then became connected with the Rolph School as Professor of Physiology, and had the



DR. JOHN FULTON,
DR. JOHN B. KENNEDY.

NORMAN BETHUNE'S SKELETONS
AT PLAY.
DR. JAMES ROSS.

DR. WM. RAWLINS BEAUMONT.
DR. RICHARD ZIMMERMAN.

same chair in Trinity Medical College till 1880, when he was appointed Professor of Surgery, which post he held until the date of his death from pneumonia in May, 1887. He was also on the staff of the General Hospital, where he will be remembered by many old students as a most excellent clinical teacher. My recollections of him are that he was a conservative surgeon, and never operated until he was convinced that it was the right thing to do, which is a lesson that some latter-day surgeons might well profit by.

He became connected with the *Canada Lancet* in 1868, and from that time on he was editor and proprietor, conducting the



DR. FREDERICK A. STRANGE.

journal with tact, vigor and ability. At various times he held positions of honor, such as member of the Senate of the University of Toronto, of the Ontario Medical Council, and various positions in the Canadian and Ontario Medical Associations.

John B. Kennedy was born at Bowmanville, or Newcastle, on the 26th of April, 1842, and died in Chicago, December 26th, 1891. It was at Upper Canada he received his early education, and he subsequently obtained his B.A. at Trinity College. After entering medicine, he became clinical assistant to Dr. Joseph Workman, at the Asylum for the Insane, in 1863, and remained there until his graduation in 1867. Soon after this he began

practice in Toronto, and was a member of the staff on the old Toronto School of Medicine. Subsequently he became a lecturer in Trinity Medical College. He was surgeon to the Toronto, Grey and Bruce, and the Grand Trunk railways, and to the Royal Engineers, and was on the staff of the General Hospital.

Kennedy at one time did an enormous amount of surgery. At this time he was a brilliant and fearless operator, popular with the students, loved by his patients, and respected by his friends.

Frederick W. Strange came to Canada from England in 1869, and began practice in Aurora, where for seven years he enjoyed a very lucrative practice. He removed to Toronto in 1876, and soon had a large practice. He represented North York from 1878 to 1882 in the Dominion Parliament. At one time he was Captain of the 12th York Rangers, and afterwards of the Queen's Own, and for many years before his death was surgeon to "C" Company, in which capacity he served during the North-West Rebellion of 1885.

He was for a number of years surgeon to the General Hospital and did a large general practice. We all remember Strange as a man of prepossessing appearance and a fine physique.

Upon looking back on the old days one cannot but regret that a man of such evident ability did practically nothing for the advancement of surgery in this country. He died suddenly, June 5th, 1897, and was buried with military honors, regretted by many of his old patients and friends.

Richard Zimmerman, M.D., M.R.C.S., was born at Clifton in 1851. "Dick," as he was familiarly called by his associates, entered the Toronto School of Medicine in 1868, and took the annual examinations in the University of Toronto, at each of which his name headed the lists in every subject, and at the end of his course he was awarded the University and the Starr gold medals. He went to England, and was soon after appointed resident at St. Thomas's Hospital. Returning to Toronto in 1874, he commenced practice with very bright prospects. He was made Demonstrator of Normal and Pathological Histology in the old Toronto School, and Pathologist to the Toronto General Hospital. He was a surgeon of no mean repute, and a brilliant career was prophesied for him, but it was not to be, and he was cut off in the very prime of life in February, 1888. Prof. Osler, of Baltimore, in writing to Toronto after his death, speaks of him thus: "So poor old Dick is dead—peace to his ashes! He was a good, kind friend, one of my earliest; for it is close upon twenty years since we entered the Toronto School of Medicine together."

To Dr. Wm. Canniff's "Medical Profession in Canada," from which I have quoted freely, Dr. H. Scadding's "Toronto of Old," to old files of the *Canadian Journal of Science*, the *Canada Lancet*, *Canadian Practitioner*, CANADIAN JOURNAL OF MEDICINE AND

SURGERY, the *Canadian Medical Review*, to the friends and relatives of some of the men of the past, to Dr. Uzziel Ogden, and especially to our beloved friend, Dr. J. H. Richardson, of whom may it be many, many years yet ere the chronicler has an opportunity of writing his life, I am deeply indebted for assistance in preparing this somewhat lengthy account of the surgeons of the past in Toronto. Of Dr. Richardson I could say so many complimentary things that I know he would blush to hear them. He is an excellent anatomist, a skilled surgeon, loved by his old students, and respected by his friends as he travels toward the goal, reaping the rich rewards of a well-spent life.

In the study of the lives of these men I have been reminded of the farewell greeting of the great London consultant to William MacLure:

"Give's another shake of your hand, MacLure; I am proud to have met you; you are an honor to our profession."

REFERENCES.—1. *Lancet*, March 17, 1866. 2. *Ibid.* 1854. 3. *Ibid.* 1857. 4. *Ibid.* 1862. 5. *Practitioner*, July, 1873. 6. Peters, *British Medical Journal*, June 5, 1897. 7. *Canadian Practitioner*.

471 College Street.

EPIDEMIC CEREBRO-SPINAL MENINGITIS—THE HISTORY OF AN OUTBREAK.*

BY J. McKENTY, M.D., GRETN, MAN.

DURING the winter and spring of 1893, cerebro-spinal meningitis prevailed in epidemic form within an area in North Dakota, extending about fifty miles from east to west, and fifteen to twenty miles from north to south. Inquiry from the practitioners within this territory elicited the following approximately correct information. About seventy persons were seriously ill, and almost as many others suffered from mild manifestations of the disease, such as occipital headache, stiffness of the neck and slight feverishness for a day or two. Twenty-five cases ended fatally, a mortality of about 35 per cent.

In the practice of the writer and Dr. P. C. Donovan, of Neche, N.D., there occurred some thirty cases. I kept a brief record of twenty-two of these. The average age was seventeen years, the youngest fifteen months, and the oldest thirty-eight years. The duration of illness varied from twelve hours to fifteen weeks. Ten of them died, six within the first week. No *post-mortem* nor bacteriological examination was made in any case.

With your permission I shall read a few histories illustrative of the varied clinical aspects of the disease, and will take them in the order in which they occurred in the outbreak.

CASE 1. A robust young man, aged 20, had never been ill before; no history of ear trouble was obtainable. On January the 25th, 1893, at 4 p.m., he left the farm-house in perfect health to go to the barn a few rods distant to attend to the stock. In less than half-an-hour he returned to the house complaining of head-pain and dizziness which had come on suddenly, and had prevented him from continuing his work. He denied having received a fall or any injury while out. Owing to the vertigo he was soon forced to lie down. Mental confusion followed, and by 6 p.m. he was delirious. When first seen at 8 p.m. he was tossing about in bed unconscious, constantly uttering inarticulate sounds. For some time, probably one and one-half hours the family had been unable to understand him. A complaint of head-pain was the last utterance he was able to make. It was noted that left leg and arm were moved less than the right. Owing to the restlessness his temperature was not taken, but there was little evidence of fever. Pulse 78, regular, but rather weak. The pupils were contracted and even—no squint. There were some muscular tremor, and an occasional dorsal spasm, but no continued retraction of neck. Pin

* Read at meeting of the Canadian Medical Association, Winnipeg, August, 1901.

pricks caused flexion of limbs on both sides. The coma and paralysis rapidly increased, movements of the left side ceasing before those of the right, and death ensued at 4 a.m., just twelve hours after onset. No eruption noticed. In the absence of a *post-mortem*, the exact nature of the case may be regarded as uncertain, but the prevalence at the time of the disease in epidemic form lends support to the view that it belongs to that type of fulminant meningitis described as apoplectic or paralytic.

This was the most rapidly fatal case in the outbreak, and illustrates the truth of Netter's words. In speaking of this form, he says, "It strikes with brutal suddenness in the midst of apparent health, no prodromes having given warning of its approach."

CASE 2. Belongs to the same class as the foregoing, and occurred a week later.

Mrs. S., aged 25, confined four months previously, puerperium normal, and health good ever since. She arose on a Tuesday morning in February, 1893, in her usual health, and was engaged in bathing her child, when she became so suddenly prostrated from headache and vertigo, that she was obliged to leave the child undressed, and at once lie down. Vomiting, chills and fever followed, and she passed a sleepless night owing to head and back pain.

This is the account elicited from the husband at my first visit Wednesday afternoon. She was then quite delirious, with a temperature of 103, pulse 110 full and strong, in a semi-conscious state, from which she could be momentarily aroused, but could give no intelligent answer to questions.

Turning her over in bed apparently increased her suffering, and was accompanied by jerking of the legs and muscles of the back. Slight dulness and some bronchial rales were present over both lungs, no cough. The pupils were normal and conjunctivæ somewhat congested. No strabismus. She was catheterized, and the urine found free from albumen. There was no edema.

At the second visit, on Thursday at 2 p.m., a few scattered purpuric spots of pin head size on chest and abdomen were observed. She was quite comatose, and died at 4 p.m. Thursday, after fifty-four hours' illness. For some hours before death all muscles were relaxed, and the lungs filled with a profuse serous secretion. Her bowels had moved freely during Wednesday, in response to purgative given at first visit.

CASE 3. As this was the only case in the outbreak which ran an apyretic course, I am tempted to present it, although the record is very incomplete. The patient, a young girl of about twenty years of age, under the care of Dr. P. C. Donovan, died after six days' illness, during which the temperature was never above normal, and was usually subnormal. I saw her once on the third or fourth day of her illness, and although no notes were taken, I remember distinctly the pale countenance and anxious expression, the sighing, irregular respiration, the slow, soft, irregular intermittent pulse of fifty to the minute, the great prostration and the

complaint of sleeplessness. Turning her over in bed, for the purpose of examination, caused distressing vertigo.

CASE 4. A boy, aged 3, well developed, healthy child, previous health good, took sick during the latter part of May, 1893. The initial symptoms were vomiting, restlessness and fever; convulsions did not occur. The temperature during the first week ranged from 102 to 105 without morning remission. The bowels were constipated, the tongue coated, the pulse was rapid and variable in tension, some congestion of the eyes, marked intolerance of light and noise, retraction of the neck, general muscular soreness, the least movement causing suffering. An erythematous rash on the chest, and herpes on the lips appeared early in the first week. Sleep was secured only by the use of hypnotics. He was frequently delirious. At the end of the first week fever and nervous symptoms abated, and for a few days convalescence seemed to be approaching. This remission was followed by an exacerbation lasting about another week. During the seven weeks' illness several such remissions and exacerbations occurred irregularly as to periodicity and duration. To the symptoms above enumerated were added during these exacerbations: deafness, occasional opisthotonos, slight ptosis, and at times patches of congestion in the lungs. These latter from day to day varied in position. During the fifth and sixth weeks an adynamic state with sordes on the teeth, coated tongue, abdominal distension, offensive diarrhea, a fever varying from normal to 102 with evening rise, and feeble, often irregular pulse, were the chief features. He became much emaciated. Convalescence was slow and imperfect. An awkward gait and tendency to stumbling, greater than might be attributed to muscular weakness, persisted for more than a year. The deafness was wholly recovered from in a few months.

CASE 5. The next case is of interest owing to the long duration of the illness, which began on March 15th, 1893, and ended fatally on July 3rd, after fifteen weeks' illness. It accords closely to the descriptions given by text-book writers of the chronic remittent form of meningitis.

The patient was an unmarried female, aged 25, tall and spare, of tuberculous family history. She had never been seriously ill before. The initial symptoms were constipation, head and back-ache, chilliness and high fever. Light and noise increased her suffering very much. Retraction of the neck and muscular tremor were less conspicuous symptoms than is usual.

During the many remissions which occurred the prospect of recovery often seemed bright. Like Case 4, inflammatory patches occurred in the lungs and herpetic eruptions on the lips and face.

The clinical picture during the later weeks was that of the typhoid state—abdominal distension, offensive diarrhea, profuse sweats and a remarkably variable temperature and pulse. The slightest disturbance, either physical or mental, caused a sudden

rise often of 3 or 4 degs. F. of the former, and an acceleration of 20 or 30 beats of the latter.

Owing to the general derangement of digestion, proper nourishment was impossible. The rectum refused to retain anemata, and nourishment taken by the mouth was rapidly passed through the alimentary canal undigested. The emaciation became extreme and bed-sores constantly threatening.

The mind remained clear, except for the brief periods of delirium during the first week and the acme of an exacerbation.

Death, which was due to exhaustion from colliquative diarrhea, was preceded for some days by paralysis of the sphincters.

Dr. C. B. Harris, of Pembina, North Dakota, has kindly supplied the following history of an interesting case which occurred in his practice, and which I saw with him on the third day of illness:

CASE 6. "The patient was a male, aged 18½. Had up to the 11th of March, 1893, been a strong and healthy boy. On this day he became sick with the following symptoms, viz: Intense headache, reddened face and eyes, chills, vomiting, loss of appetite, and a desire to be left alone. When aroused he seemed frightened and wild. On the 12th, at 4 p.m., I was called to see him and found him very ill, with high fever, rapid pulse and acute delusional delirium. The delirium was so severe as to require the efforts at times of from two to four persons to restrain him from running away. Sleep was impossible to obtain except through heavy hypodermics of morphia. At irregular times for the first three days he would speak in a somewhat sensible manner to members of his family, then suddenly break away in his delusional delirium. In his delirium he would talk and rave at his attendant and the doctor.

"Constipation was quite complete. Medicine was out of the question, as every attempt to give it caused a struggle. Hypodermics and injections were used. This delirium continued until forty-eight hours before his death. It then became more passive. A paralysis of right arm began forty-eight hours and of right leg eight hours before death. He was comatose several hours before the end, which came on March 16th, after an illness of six days.

"There was slight retraction of head and tenderness along the spine. Muscular contractions were observed and to such an extent that I sometimes felt that a general convulsion was threatening. Such did not occur."

The foregoing cases occurred during the winter and spring of 1893. After the spring of 1893, in the larger portion of the territory invaded, there were no more cases; but at Neche, N. D., and vicinity, the field in which the writer and Dr. P. C. Donovan practiced, the disease lingered for two years longer.

During the summer of 1893 no severe cases originated, but in the following winter there were several, some of them fatal. A similar subsidence during the summer of 1894 and recrudescence

with the advent of the following winter also occurred. The last undoubted case of which I have record occurred in June, 1895.

This tendency of the disease to recur in places previously infected is referred to by all authors consulted.

In the same house in which Case 4 was sick in June, 1893, his aunt and his mother took sick in the following October and November respectively. The latter had a severe attack, which kept her in bed two months and left her with severe periodical headaches for three years following. The former was a visitor and had been living in the house three months before the onset. (Netter says the period of incubation is probably from three to eleven days. The other writers consulted either do not refer to the point or state that it is not determined.) Some features of her case are of interest:

CASE 7. Miss F., aged 21, of good physique and family history, on October 18th, 1893, got some powders for relief of headache, which she said had troubled her night and day for nearly two weeks.

November 2nd she was found in bed, temperature 104, pulse 110, suffering intensely from pain in head, neck and limbs. The powders had given temporary relief, but for several nights she had slept very little. Bowels had not moved for two days. Hyperesthesia of the skin, retraction of the neck, and marked tenderness on pressure or percussion over the lower cervical vertebræ were noted.

November 8th, all symptoms much improved, and for a few days was fairly well. A relapse followed after sitting for an hour in a chair on the 12th.

Seven weeks later convalescence was finally established. Several remissions and exacerbations characterized the course during these seven weeks, each exacerbation adding some symptom to the already numerous assortment, and thus giving occasion for suspecting hysteria—a suspicion not supported by anything in her history since recovery. The most remarkable of these symptoms was a harassing, dry cough, with an inspiratory whoop resembling whooping-cough. It began quite suddenly on December 1st, and was so constant that without the liberal use of morphia, subcutaneously, she could neither sleep nor eat. Hardly time to answer questions was left her. It as suddenly ceased and was replaced by vomiting for some days, then the vomiting ceased and the cough returned. This alternation occurred several times, the cough monopolizing most of the time. The vomiting occurred without reference to the condition of the stomach; in fact, digestion remained good throughout the whole course of her illness, and there was but slight loss of flesh. The lungs were never involved. Vertigo and herpes labialis were troublesome symptoms. For a few days in March the cough returned, and again in April. There were no sequelæ.

A year later, in November, 1894, with the onset of the second

recrudescence, the following example of the grave form of the disease occurred :

CASE 8. A robust laborer, of good habits, went to bed Wednesday night in his usual health ; awoke during the night from headache, and remained awake and restless till morning. During the next day, Thursday, he remained in bed, and on account of the light aggravating his headache, he had his room darkened. Thursday night he was restless and delirious. This is the story told by his wife on my first visit Friday morning. No history of traumatism or otitis. He was tossing about in bed, at times grasping his head with both hands, partly unconscious, but could be aroused, and then replied to questions in a confused manner. He seemed afraid, and resisted efforts to give him water or medicine. Temperature 103, pulse 60 soft, full, irregular. Bowels had not moved for two days. Lungs normal, no cough, urine free from albumen or sugar, pupils contracted and even, conjunctivæ congested, no edema, no eruption. Pressure or strong percussion over lower cervical vertebræ caused him to flinch. Muscular tremor and jerky action of limbs in his movements were noted. Calomel was placed on his tongue, and ice bags to his head and spine. He could not be given medicine. Bowels moved freely Friday evening. The delirium had become low and muttering, and during the night subsided into coma, which continued till death at 11 a.m. Saturday. Saturday morning a faint purpuric eruption was observed over thorax and abdomen.

A recital of any more such imperfect case histories would be unprofitable and wearing to your patience.

The following points, however, are of sufficient interest to warrant a brief reference :

(1) In only one case was the petechial eruption so conspicuous a symptom as to suggest the old name, "spotted fever," and contrary to the teaching of text-books, it was a mild case.

(2) A symptom to which the same authorities make slight reference, viz., aggravation of the rachialgia on pressure, especially over the lower cervical vertebræ was almost constant in these cases.

(3) In the beginning of the epidemic, *i.e.*, in the winter of 1893, the majority of the victims were adults ; during the recurrences of 1894 and 1895, children were more frequently attacked.

(4) In the writer's experience no evidence of contagion was discovered in any case, excepting this : while nursing her sister (Case 7), the mother of Case 4 took the disease ; but, as before intimated, the house was probably infected from the time of her son's illness, six months previously.

In the first case, in the epidemic which occurred early in January, 1893, in the practice of Dr. E. I. Donovan, of Langdon, N.D., he was unable to trace any source of contagion. Very severe stormy weather prevailed at the time.

From Langdon the infection spread steadily in one direction eastward across a sparsely settled country, reaching Pembina, fifty

miles from its starting point, about a month later. No trace of it east of Pembina was obtainable.

The method of propagation of the disease has not been determined. Netter says: "I believe that the contagiousness of cerebrospinal meningitis is indisputable and that this is the most essential etiological factor."

Osler says: "The disease seems not to be directly contagious. It is probably not transmitted by clothing or excretions."

Osler's view, I believe, is that of the majority of writers.

(5) Pneumonia was not often associated, and when it did occur was never so extensive as to add to the gravity of the case.

It was not unusually prevalent during the outbreak of meningitis, but in the two years following (1895 and 1896) many children suffered from what appeared like a combination of the two diseases. In these cases it was impossible to say which was the primary disease.

(6) Joint complications did not occur in any case.

(7) In addition to the sequelæ already mentioned, permanent mental impairment followed in one case. In this case the onset and course during the first week was quite similar to Dr. Harris' case. The patient, an adult male, was confined to the house for three months, delusional delirium occurring at irregular periods during this time.

Three years later his friends reported that he was still mentally feeble and apathetic, and lacked his former energy.

REFERENCES.—Osler: "Practice of Medicine," 3rd edition. Netter: "Twentieth Century Practice." Ormerod: "Allbutt's System of Medicine." Stille: "Pepper's System of Medicine." Whittaker: "Buck's Reference Handbook of Medical Sciences." Bartholow: "Practice of Medicine." Holt: "Infancy and Childhood."

MILD SMALL-POX.*

BY G. A. KENNEDY, M.D., MACLEOD, N.W.T.

I WISH to preface this short paper by explaining that when I sent its title to the Secretary I intimated that my intention of bringing the subject up was conditional on no one else doing so, but as Dr. Starr in replying said that while Dr. Bracken was down for a paper he considered mine would not clash with it any way, I concluded to present a few of the aspects of mild small-pox as they have appeared to me during the recent epidemic in the North-West Territories.

You must, therefore, be good enough not to consider my paper as an exhaustive treatise on the subject, but simply a contribution to the discussion by one with no special knowledge and with limited experience.

The outbreak in the Territories was widespread, it having existed in the Edmonton country, and later in the Maple Creek District, for some time before its true nature was recognized. Through the kindness of Dr. James Patterson, Quarantine Officer for the Dominion Government, I am enabled to quote the following statistics. Dr. Patterson says:

"I am confident from what I have seen myself, and from reports on file here, there have been 1,500 cases. It has existed most extensively in the district comprised within one hundred miles north, south, east and west of Edmonton. Fully 1,000 cases have occurred there. It was also prevalent at Onion Lake, Frog Lake, St. Paul de Metis, Lac la Biche, near Prince Albert Touchwood, Manor, Fort Pelly, Maple Creek, Calgary, Cochrane, Macleod, Pincher Creek, Lethbridge, Magrath, Stirling, Cardston and Athabasca Landing. The greatest number of cases have occurred amongst the French half-breeds, unvaccinated. Treaty Indians, on reserves, have not suffered to any extent, annual vaccination being the rule. Not one case has been seen or heard of amongst Galicians, Doukhobors, or Roumanians, due to compulsory vaccination in youth, and re-vaccination on their recent passage across the Atlantic and at Halifax. A number of cases have occurred at the various points amongst Anglo-Saxons who were unvaccinated, vaccinated many years ago, or recently vaccinated with vaccine which has proven itself to be practically inert. I do not know of a single case of small-pox where vaccination was what might be called recent and successful with Slee's or Mulford's vaccine.

"Fifty per cent. of all the cases were of an extremely mild character, and thus arose the doubt in some quarters as to what the disease really was. Forty per cent. were cases of typical varioloid.

* Read at meeting of the Canadian Medical Association, Winnipeg, August, 1901.

Ten per cent. were severe, almost confluent. I saw two cases in adults, confluent, both fatal. The mortality has been slight. I know of thirteen deaths. The disease prevailed fully as much amongst adults as amongst children."

I had personally to do with some ten cases, besides seeing a couple of others in consultation and a family of seven during convalescence. The cases ranged from very mild to fairly severe, and without going into the histories of these cases in detail, and with a thorough appreciation of the fact that the number is very meagre on which to base definite conclusions, I wish to state now that the dominant impression left on my mind was and is that the disease, while being undoubtedly small-pox, was a distinct type—not variola modified by vaccination—but a variety essentially different from what I had previously seen and what the text-books describe. This is undoubtedly a debatable point, but I advance it, possibly on insufficient grounds and certainly with no great experience, as being my present conviction. What reasons have I for holding this opinion? You all know the clinical pictures of an ordinary case of discrete and confluent small-pox, and in order to enable you to grasp the difference between it and the type I am endeavoring to establish I shall briefly describe my first case. It was in a woman aged thirty-six, unvaccinated. I saw her on the second day of her illness and found her suffering from the following symptoms,—headache, pains in chest, body and back, chills, sickness at stomach, fever. Temperature ranging from 101.5 to 103, and pulse 100 to 110. The symptoms abated somewhat under treatment, and two days afterwards a papular rash appeared on forehead, face, wrists, chest and back. The next day, the fifth day of the disease, some of the papulæ became vesicular and the fever defervesced, temperature dropping to normal and all the other symptoms disappearing. Owing to absence I did not see her again for two days, or the seventh of the disease, when I found the rash fully developed and the vesicles umbilicated. The vesicles increased in size for next three days, and on the tenth day most of those on the face and wrists had become pustular. I might add that the eruption was far from being uniform, papulæ, vesicles and pustules being found alongside each other. It was fairly thick on the face and wrists, on the neck and shoulders, and was found on the palms and soles, as well as scattered over the body and limbs. There was absolutely no secondary fever and by the sixteenth day most of the larger pustules had dried into brown scabs and fallen off, leaving no pit or ulceration, but simply a purplish, slightly-raised discoloration of the skin. The smaller spots seemed to become reabsorbed, leaving a similar but smaller mark, and in two days more, or in eighteen days from the first prodromal symptoms, the skin could be called entirely clear. I saw this patient a few days ago and the discolored parts are still plainly discernible, but are gradually disappearing.

Now I wish to point out that there are few important differ-

ences up to the time of maturation. The period of incubation I found in this and other cases to be about the same, the prodromal symptoms are the same, excepting that in my experience the initial rashes were absent, the same four days of pyrexia with temperature ranging from 101 to 105, the general *malaise*, the severe frontal headache, which I came to look on as almost pathognomonic, and backache frequently not less severe. Then there is the sudden defervescence, with complete subsidence of the other symptoms. The rash, too, does not differ in any very important respect, excepting its non-uniformity up to the time of pustulation, and here the disease departs from the clinical course of the old established small-pox and strikes out a line of its own. In the first place there is no secondary fever, or practically none. I believe that the experience of others agrees with mine in this respect. In the second place the pustules do not break and exude pus with its characteristic stench, which makes the disease so loathsome and the ulceration going on under the scabs which leaves so disfiguring a legacy. Instead, they simply get brown, commence to dry and shrink up, gradually separate from the skin around the edges and fall off like over-ripe fruit. The ultimate results are consequently vastly different, for instead of the unsightly scars which are left by ulceration, we have only discolored, in some cases slightly raised, patches, which sooner or later disappear altogether. As a further consequence, the disease is over and the skin clear in a much shorter time than in variola.

So much for the clinical course.

Now let us consider for one moment the mortality statistics. In our epidemic we had 1,500 cases with thirteen deaths, or of a mortality of about four-fifths of 1 per cent. In Minnesota during the past two and a half years there were 7,211 cases reported, with a mortality of two-thirds of 1 per cent. and in the whole of the United States (I am assuming that the disease prevalent there is similar to that with which we have had to do); in 11,964 cases reported between December 28th, 1900, and March 29th, 1901, or three months, there were only 157 deaths, or a percentage of 1.31.

Here are over 20,000 cases with a mortality of, roughly speaking, 1 per cent. Just let these figures sink into your minds.

Is this the same disease which the text-books describe and in which the mortality is from 25 to 30 per cent.? Is it the same disease as the small-pox which in 1898 and 1899 caused 107 deaths in 439 cases in the United States Army, or 29 per cent., or, to come to a local matter, is it the same disease which only a year ago, in Winnipeg here, caused six deaths in 37 cases?

Remember that in varioloid proper the mortality is variously estimated at from 3 to 5 per cent. Remember, too, that in our epidemic in the North-West by far the greatest number of cases occurred among the French half-breeds, who were largely unvaccinated, who live together in winter almost as badly as the poorer

classes in the tenement-house districts in large cities and whose sanitary surroundings leave everything to be desired.

I ask again are not these facts significant, or are they to be explained by saying that this is small-pox modified by vaccination?

Allow me to note another point. Small-pox, like most of the other acute infectious diseases, is more fatal to children than to adults, and in the Montreal epidemic of 1885, in a total of 3,164 deaths, 86 per cent. were children under ten years old. My experience with this form of small-pox, with which we have had to do, is that it is no more severe and no more fatal in children than in adults, and indeed if there be any difference, children take it more lightly and get over it more easily. I believe that my experience in this respect is borne out by others who have had a much larger number of cases.

There is still another notable difference, which follows of course on the difference in the clinical courses of the two forms. The patient convalesces much more quickly, and there is no permanent disfigurement. Instead of the unsightly scars which to youth and beauty particularly has made small-pox so dreaded a nightmare, there are only the discolored patches which the lapse of a few months causes to fade away, leaving the skin as if it had never been touched by the hand of disease.

To recapitulate, we have the following differences between true small-pox and the variety which we have been considering: (1) A radical difference in the clinical courses; (2) an immense difference in the mortality; (3) the fact that the disease is as mild in children as in adults, and (4) the absence of any permanent disfigurement.

A disease which is not dangerous to life, which involves only three or four days' actual sickness and which is not destructive of beauty, is I contend so essentially different from variola vera as to be entitled to rank as a distinct variety.

It is open to argument of course that these variations have been brought about by vaccination and that this is nothing more or less than varioloid. I do not hesitate to say that I find this impossible to believe. Varioloid is true small-pox modified by vaccination, and universal experience is that it can and does give rise to the severe and confluent forms in those who have not been protected by vaccination. If this is varioloid it is inconceivable to me why among the very large number in the Territories who were unvaccinated and who were attacked there were so few really confluent cases and so few deaths.

It is also said now that this is no new thing, that epidemics of mild small-pox have prevailed before, and that in raising any question about the nature of this disease we are only threshing out old straw that has been thoroughly winnowed and stored over a hundred years. I am quite prepared to admit that there have been epidemics of mild small-pox before, but that simple fact, while disposing of the argument that we are becoming racially immune

owing to the results of generations of vaccination, does not explain why there should be so radical a difference in the course and results of two epidemics occurring only a few years apart, one leaving a trail of death and disfigurement, and the other practically harmless.

I prefer to believe, as I have indicated before, that this is a distinctive variety, that the disease breeds true, and that while a case of varioloid can give rise to a severe case of confluent in the unvaccinated, a case of what, for want of a better word, I have been calling mild small-pox, will produce only mild small-pox—possibly severe cases of it—but differing essentially from the old established form.

The lessons to be derived from our epidemics are the following:

1st. Care in diagnosis. The differential diagnosis between small-pox and chicken-pox has been so often and so widely published of late that there is now very little excuse for a man making a mistake.

2nd. The necessity of students having an opportunity, when one is available, of seeing cases of small-pox. There is no more reason why they should not see small-pox than measles or scarlet fever (under proper surveillance), and yet the fact remains that not one student in a hundred has ever seen a case of small-pox when he graduates.

3rd. Greater care in vaccination. My observation has taught me that not one quarter enough attention is paid to this simple operation, and the results are alike discouraging to the public and the practitioner. Theoretically and logically it seems to me that the hypodermic syringe is the best method, although I am bound to confess that in the few cases in which I have tried it, it has not been entirely satisfactory, but I propose to continue the trial, and I venture to hazard the prophecy that it will be the method of the future.

A word as to the differential diagnosis between small-pox and chicken-pox. It is easy when you find spots in the palms of the hands, or on the soles of the feet, for of course when they are found in these situations it is proof that the disease is small-pox. In this connection I notice that Dr. Herman Spalding, of Chicago, says that a spot on the ear is pathognomonic, as it is never found in that organ in chicken-pox. This is interesting if well founded, but why it should be so passes comprehension. The average practitioner is only too glad to take the dictum of a specialist, and this discussion will not have been in vain if it clears up this single little point. The differential diagnosis has been so often published of late that I shall not repeat it here, but such very important interests are involved that it is the duty of every man to thoroughly acquaint himself with every distinguishing characteristic. We cannot afford to repeat the many mistakes that have been already made, for I fear it is largely the fault of members of our own profession that the disease has spread as widely

as it has. Our North-West Government did a very wise and sensible thing in placing chicken-pox in the list of infectious diseases, and imposing a quarantine, and now there is only one course open to a man, isolation and notification. Under these circumstances small-pox should not spread.

The following is such a remarkable instance of the value of vaccination that it is worthy of record:

There is a colony of Galicians east of Edmonton, numbering nearly ten thousand souls. On the west and to the south-west of them is a colony of French half-breeds. Amongst the latter there were over five hundred cases of all grades of severity. On the east of them is another colony of half-breeds, where about one hundred cases existed. The breeds were unvaccinated, the Galicians thoroughly vaccinated. The breeds pass constantly, as these people do, from one colony to the other, backwards and forwards through the Galician colony, yet not one case has occurred up to date amongst the Galicians.

This I think is clear proof of the value of vaccination, and also that the disease is small-pox—the only disease against which these latter people are protected.

ON THE NECESSITY OF BETTER RECOGNITION AND ISOLATION OF TRACHOMATOUS PATIENTS IN CANADA.*

BY W. GORDON M. BYERS, M.D.,

Assistant Oculist and Aurist, Royal Victoria Hospital, Montreal.

THE points which I wish to raise before the Association to-day can be embodied in comparatively few words, though the matter with which they have to deal is one of paramount importance.

Two summers ago there came to our clinic at the Royal Victoria Hospital, a young girl from Glengarry County, Ontario, affected with the most intense condition of granular lids I have ever seen in Canada. The conjunctivæ were covered with heaped masses of succulent granulations, and the corneæ showed a condition of highly vascularized pannus. The girl had been unable to open her eyes properly for months past, and her vision was reduced to the counting of fingers. On questioning the patient it was clear that in spite of the highly typical character of the trouble, the serious nature of her disease had been quite unrecognized, for without adopting any preventive measures whatever she had been allowed to mix freely with the other members of the community.

A year later, while away on my holidays, I was asked to see a young boy in the County of Leeds, Ontario, for a chronic disease of the eyes. The appearance was at once suggestive, and on evert-ing the lids I found them covered with typical trachoma follicles. Here, too, in spite of the fact that the parents had put themselves to pains, they had been unable to ascertain the real nature of the condition of their boy's eyes, and at no time had they been advised to adopt even the most elementary precautions against the spread of the disease.

Since these patients came under my notice I have thought not a little of the trachoma problem as it touches our country, and I am persuaded through information and investigation that there is a fairly large number of unrecognized and untreated cases of granular ophthalmia scattered here and there throughout the Dominion. Thus, for instance, I have been informed by medical friends that the disease is comparatively common in certain districts of Manitoba, and even at our hospital the territory from which our trachomatous patients were drawn was extremely broad, our clinics having been visited by patients from the counties of Glengarry (two centres), Stormont, Dundas, Leeds (two centres), Renfrew, Lennox and Carleton in Ontario; and Brome

* Read by proxy at meeting of the Canadian Medical Association, Winnipeg, August, 1901.

(two centres), St. Hyacinthe, Missisquoi, Huntingdon and Ottawa in Quebec.

To those acquainted with granular ophthalmia, the years of distressing annoyance to be passed by those affected, and the debarment from ordinary work, let alone the higher pursuits and pleasures of life, it must be a matter of apprehension that cases such as I have spoken of should exist unrecognized and unisolated to act as centres of infection throughout the country.

There is probably no doubt that the pure, sunny character of our climate has heretofore acted as a barrier to the spread of this disease, and fortunately the condition is comparatively rare in Canada. Nor do I think there is any present indication of a rapid increase of the malady; I only wish to assert that we have with us numerous centres of infection, and that a small amount of pains now may save us much trouble in years to come.

Every practitioner ought to make himself familiar with the condition as far as possible, and be on the look-out for its occurrence. Diagnosed cases should be carefully warned to employ separate towels, soaps and basins, should be isolated as regards their sleeping arrangements, and in the case of children withdrawn from school. Doubtful cases, and patients requiring special treatment—and there is no doubt that if proper measures are adopted, especially in the early stages of the disease, a certain number of cases can be brought to a standstill—should be very properly referred to a competent specialist.

The general adoption of measures such as these would probably be sufficient to deal with the cases at present with us in Canada, and other means, such as the institution of trachoma schools, might safely be left to a more pressing occasion.

It still remains for me, however, to speak of one strong prophylactic measure. There is no doubt whatever that the number of our trachomatous patients is being yearly added to by immigrants to this country. Fifteen per cent. of the cases of granular ophthalmia at the Royal Victoria Hospital Out-Patient Clinic, during the past six years, was of foreign extraction, and among our patients with this condition were Russian and German Jews, and a resident each from England, Ireland, China, Italy and Syria. And I scarcely think that the above percentage properly represents the facts, as the people most likely to suffer from this trouble are settling largely in our Western districts. As an example of what I say, I may mention that I had it on good authority that the cases of sore eyes among the Doukhobors were probably trachomatous in nature.

A trachomatous patient is a highly undesirable, for the most part a useless, and a dangerous citizen, and I see no reason why these individuals—or others for that matter suffering from certain diseases different from that under discussion—should be ad-

mitted to our country where only strong, active people are needed, no matter how slow the tide of emigration may be.

Heretofore, government authorities generally have not classed trachoma among the infectious diseases, but there is no reason why Canada should follow this blind lead. Better that such patients should be warned not to start on their journey to this country, but once here I think it only fair to the general body of the citizens that they should be sent back to the place from which they came. Twenty months ago, and again last autumn, I advocated in lectures the adoption of this measure. On both occasions the matter was brought before the notice of federal officials, but as yet the Government has taken no steps in the matter.

If the quarantine authorities were unable to deal with the matter there are free hospitals at all the points of entry—Halifax, Montreal, Winnipeg, etc.—with competent specialists to whom doubtful cases might be referred. And under any circumstances, even should the Government not feel disposed to adopt such radical measures as I have indicated, trachomatous patients should be referred to the institutions mentioned for treatment and admonition regarding the infectious nature of their trouble.

I hope this short paper will elicit thought and discussion on the subject, but let it not be forgotten, if these remarks seem those of an alarmist, that the trachoma problem has had to be faced before this by at least one Government in Europe.

WE beg to acknowledge with thanks the loan by Dr. Wm. Canniff of several of the half-tones appearing in connection with Dr. Starr's address published in this issue of the *JOURNAL*.

THE Medical Society of the State of New York held its semi-annual meeting on October 15th and 16th, 1901, in Hozack Hall, at the New York Academy of Medicine, New York City. The meeting was a banner one, both in point of attendance and quality of papers read.

Dr. P. H. BRYCE, Deputy Registrar-General, has sent out notifications to the municipal registrars of the Province, notifying them that unless the monthly returns of deaths and births are sent in they will be prosecuted and fined. The recording of proper statistics has been rendered very difficult by the absolute indifference of many officials.

MR. R. R. BENSLEY, B.A., M.B., who has been a lecturer in biology at the University of Toronto for the past few years, has accepted a very lucrative and responsible position in the University of Chicago. The University of Chicago is one of the best universities in the States, and is very heavily endowed, which makes it possible for them to pay the very highest salaries to their professors.

Selected Articles.

THE TREATMENT OF SOME CASES FREQUENTLY MET WITH IN MEDICAL PRACTICE.

BY C. W. CANAN, M.D., H.S., Ph.D., ORKNEY SPRINGS, VA.

SEVERAL years ago, after having had some unpleasant experiences with iodoform, I determined to make a search among the newer iodine combinations for some preparation which would possess the advantages of iodoform without its drawbacks. Aside from the unpleasant odor of iodoform, which renders it well-nigh impossible to employ it in many cases, it is a dangerous drug which must be applied with caution, since poisonous results from its absorption have been quite frequently reported in later years. Professor Robert T. Morris has especially called attention to this occurrence, which often is not recognized, and the symptoms referred to other conditions.

The preparation which approximates most closely to iodoform in its effects, and seems to be entirely free from its objectionable features, is euophen, which is a chemical combination of di-iso-butyl-cresol with iodine. Euophen only acts when placed in contact with secreting surfaces which decompose it and liberate free iodine. It is slightly resinous, which makes it adhere well to wounds and mucous membranes. Owing to the lightness of the powder, it will cover four or five times as much surface as iodoform. As far as I am aware, no case of toxic effects has ever been reported from the use of euophen, and while it is a good stimulant it is practically non-irritating.

Instead of discussing in detail its many indications, I will report some of the most interesting clinical observations copied from notes made at the time.

CASE 1.—A.E.B., male, 45 years of age, distiller, had suffered for years from an ulcer located four inches above the ankle. This had been treated by various physicians with indifferent results. When the patient came under my care the ulcer was about as large as a silver half dollar, with deep indurated edges, the skin for some distance below being edematous and eczematous. I first applied a poultice to hasten the separation of the slough that was forming. When this was complete and a granulating surface ex-

posed, it was covered with euophen powder, rubbing it well in under the edges of the skin. A roller bandage was then applied from the toes to six inches above the ulcer in order to relieve the venous engorgement around it. The bandage was secured above and removed from the foot and region of the ulcer; the edges were then drawn together with adhesive slips which reduced it about one-half in size. It was again dusted with euophen, the bandage removed, and the affected parts covered with antiseptic gauze. The dressing was completed by applying an even roller bandage over all from the foot to the knee. The patient was directed to carefully regulate his diet and habits, to abstain from stimulants and to spend most of his time with the foot and limb elevated. The ulcer was dressed once a week with euophen, and the edges strapped as before. The eczema had disappeared at the second dressing, and in four weeks the patient was dismissed with the ulcer healed.

Since 1896 I have treated no less than ten patients with chronic leg ulcers after this method, and in every case a cure was the result.

Aside from simple ulcers I have derived good results from euophen as an application to chancroids, chancres, condylomata, ulcerating lupus, and syphilides, either in powder or ointments of ten to fifteen per cent. It is also an excellent antiseptic dressing for contused and lacerated wounds even after they have become infected. In the treatment of extensive burns I have successfully employed the following formula: Euophen, 3 parts; olive oil, seven parts; applied on sterilized gauze with absorbent cotton. It is one of the best remedies at our command to destroy the unpleasant odor of cancerous sores.

CASE 2.—Annie B., female, 18 months old, was brought to me with the face and neck covered with eczema. There was a large weeping surface, drops of serum were oozing out everywhere, and crusts and scabs forming; the ears and eyes were swollen and the child was in agony. I at once muffled her hands and dusted her face and neck with euophen, and gave the mother directions to dust the parts freely whenever the serum oozed through. On the third day I saw the child and found it quiet; the face was almost one continuous scab. In a few places I found pus pent up under it. These points were poulticed and anointed until removed without pain, then washed with carbolized water, dried, and again dusted with euophen. At the end of the first week many of the scabs or crusts were loosening, leaving healthy skin beneath, and by the end of the second week the face was nearly normal, except dark-red spots where pus had formed, which disappeared in time.

CASE 3.—I. M. applied to me for treatment for the following condition: Rheumatic trouble had gradually doubled him up until his head and shoulders were almost at right angles to his body.

During later years he had greatly increased in flesh, until large rolls of adipose tissue lay in contact across the epigastric region. The sulcuses between them had from friction and retained secretion become eczematous; during warm weather the irritation was almost unbearable, and the parts gave off a disgusting odor. These folds were separated and cleansed with carbolized warm water, after which the whole inflamed surface was dusted with euophen, and kept separated with pads of absorbent cotton. The patient was directed to dust well with the drug every second day, and apply fresh cotton. In a few weeks he reported the trouble cured, and has prevented its return each season by applications of euophen.

It is claimed by some that euophen will not cure eczema and psoriasis. According to my experience this is true in reference to the latter, but I have convinced myself that certain varieties of the former affection are benefited by its use, especially eczema with a profuse serous discharge. In the dry form an ointment consisting of euophen and aristol, of each four drachms, boracic acid, two drachms, and lanoline, four ounces, is of benefit. Herpes zoster and progenitalis, acne, syccosis and ivy-poisoning are frequently cured with euophen. I have arrested the spread of erysipelas by painting the affected parts with euophen dissolved in flexible collodion.

CASE 4.—Mrs. M. N. came to me complaining of backache and pains in the lower part of the abdomen, radiating down the inner side of the thighs; her limbs were so weak at times that they would with difficulty support her weight; there was palpitation of the heart with numbness of the arms and hands. There was also present a feeling of weight or heaviness in the lower part of the pelvis, and soreness when walking. On examination I found a large ulcer on the posterior part of the cervix, with erosion of the external os. The neck of the uterus and adjacent parts were swollen and congested, and the womb itself was very large, with tough tenacious mucus exuding through the internal os. The ulcer was a deep, ugly one about as large as a quarter. I at once douched out the vagina with bichloride solution, 1 to 1,000. Then through a speculum the ulcer and external os, which was everted, were mopped clean, and the whole covered with euophen by means of a powder-blower. She was given hollow suppositories filled with the same drug, and was directed to douche the vagina with a half-gallon of hot water from a fountain syringe before retiring, and then while lying on her back to insert one suppository well against the cervix. This was to be repeated every night, and she was to return to my office twice a week for treatment. This course of treatment was carried out as outlined above, with rapid improvement of both local and constitutional symptoms, and at the end of one month the ulcer had healed, the erosions and con-

gested condition of the os and cervix had disappeared, the pains, weight, and reflex nervous symptoms were gone, and the womb was fast returning to its normal size. A tonic now completed the cure.

In the treatment of vulvitis, vaginitis, leucorrhea, ulceration of the cervix, and endometritis euophen is a very important remedy. Combined with lanoline or vasoline or any other convenient base it makes an excellent application in case of a granular os. It should be employed through a speculum on pledgets of absorbent cotton packed thoroughly around the diseased surfaces. For metritis and endometritis five grains should be thoroughly suspended in one-quarter ounce of glycerine and three-quarters of an ounce of distilled water, and injected gently into the uterine cavity through a soft rubber catheter, to which has been attached a glass tube two or three inches long. I ground down the nozzle of the syringe, so that it would fit into this glass tube, and by this arrangement it is possible to note whether the euophen is well suspended; if not, remove the syringe, thoroughly shake it, and then finish the injection. The same instrument is useful in cases of cystitis, posterior urethritis, and prostatitis. As a vehicle, olive oil can be employed, or distilled water if care is taken to keep the drug well suspended in it. The quantity used at each injection will vary according to the indications. Some advise an amount not exceeding ten grains, while in very chronic cases, where the bladder walls are coated with tenacious mucus, I have used as much as twenty grains. The amount of oil or water should not be less than two ounces of the former nor less than six ounces of the latter. If the bladder is previously irrigated with warm water, smaller quantities of the euophen and the menstruum need be employed. In posterior urethritis and prostatitis, injections of euophen, one drachm to the ounce of fluid petrolatum, are highly recommended.

CASE 5.—J. F., 22 years old, farmer, had "a gathering" in both ears when four years old. They discharged freely for some time, then ceased for a short period only to begin again. His parents had consulted but one physician, who directed them to syringe the ears daily for a while, and finally told them that the child would outgrow the trouble. The discharge kept up more or less through all these years, his hearing failing in proportion. The secretion was occasionally so offensive that it could be detected throughout his home, and so acrid that his ears would be sore. Syringing had been kept up from time to time, when discharge was profuse. On examination I found only a fringe of the tympanum around the canal, and the middle ear filled with pale, flabby granulations. The external ear and canal were eczematous and ready to bleed at the slightest touch. He could hear the tick of a watch two inches from the right ear, but it had to be pressed

against the left ear to enable him to hear at all. After mopping out all secretion I plugged the external auditory meatus to prevent outside pressure from the air; then the middle ear was inflated through the Eustachian tube, driving the pus outward. The ear was again mopped out and euophen blown well through the drum into the middle ear. This treatment was given once a week, and the patient was directed to wipe out the ears daily, and to fill the canal with the same powder. The discharge gradually grew less, the eczema healed, and in three months the case was pronounced practically cured. Two years have elapsed without any return of the discharge. The hearing improved very little because of structural changes.

Quite a number of cases of otitis media in children have been treated with euophen by me with excellent results. The dry powder is also of value in ozena, applied by insufflation or as a snuff. A mixture of euophen with glycerine, applied with a brush, is recommended in inflammations of the throat, such as tonsillitis and pharyngitis.

In conclusion, I would impress upon the profession the value of euophen combined with pure Norwegian cod-liver oil or pure olive oil in the treatment of tuberculosis. The following is the best combination: Euophen, 1-2 ounce; pure cod-liver oil, 1 pint; oil of sassafras, 10 minims. Shake thoroughly, and apply two drachms of the mixture to the inner sides of the thighs, axillary region and sides of the chest once daily. These places should be thoroughly washed with soap and water and then with diluted alcohol, after which the euophen mixture is thoroughly rubbed in, selecting a new site for each application. The value of cod-liver oil in tubercular affections is dependent largely upon the iodine which it contains. The percentage of iodine is very small, but when euophen is added this is materially increased, and to which is attributed probably the beneficial effect of this treatment. If in any case cod-liver oil cannot be used pure olive oil may be substituted. Under this plan of treatment the night-sweats are diminished, the appetite and nutrition increased, and the patient improved in every way.

THE twenty-seventh annual meeting of the Mississippi Valley Medical Association adjourned at Put-in-Bay, after a most successful session, on the morning of the 14th of September out of respect to the late President McKinley. The following officers were elected for the ensuing year: President, S. P. Collings, M.D., Hot Springs, Ark.; 1st Vice-President, J. C. Culbertson, M.D., Cincinnati, O.; 2nd Vice-President, Paul Paquin, M.D., Asheville, N.C.; Secretary, Henry Enos Tuley, M.D., Louisville, Ky.; Treasurer, Thos. Hunt Stucky, M.D., Louisville, Ky.; Chairman Committee of Arrangements, A. H. Cordier, M.D., Kansas City, Mo.

The Canadian Journal of Medicine and Surgery

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Doctors will confer a favor by sending news, reports and papers of interest from any section of the country. Individual experience and theories are also solicited. Contributors must kindly remember that all papers, reports, correspondence, etc., must be in our hands by the fifteenth of the month previous to publication.

Advertisements, to insure insertion in the issue of any month, should be sent not later than the tenth of the preceding month.

VOL. X.

TORONTO, NOVEMBER, 1901.

NO. 5.

Editorials.

DID DR. ADAMI FORESTALL KOCH'S LATEST DISCOVERY?

IN the correspondence pages of this number we publish a very interesting communication from Dr. Adami, Professor of Pathology in McGill University, Montreal. The tenor of the letter is to show that Dr. Koch, the great German pathologist, is unjust to other workers, and claims priority for discoveries to which he is not entitled in the field of experimental pathology.

We refer our readers to Dr. Adami's letter for a review of

the evidence in support of this charge. We shall not judge the matter here, but will refer to a cognate subject, and will endeavor to show that two years ago Professor Adami expressed a very strong opinion on the non-infectivity of human tuberculosis to animals, and also a view favoring the opinion since advanced by Koch regarding the non-infectivity of bovine tuberculosis to man. These opinions of the Montreal pathologist were expressed in a remarkable paper read before the Canadian Medical Association at Toronto, August, 1899, the title of the paper being "On the Significance of Bovine Tuberculosis and its Eradication and Prevention in Canada." The paper was subsequently published in the *CANADIAN JOURNAL OF MEDICINE AND SURGERY*, December, 1899.

Frankly we confess, at the outset, that this paper was not received with much favor. Two years ago the identity of bovine and human tuberculosis was accepted by Canadian physicians as dogma. It is true that Theobald Smith, an American pathologist, had shown that cattle are relatively insusceptible or but slightly susceptible to human tuberculosis, although tubercle bacilli obtained from cattle and introduced into other cattle produced in them a relatively virulent disease. Two other American pathologists, Dinwiddie and Frothingham, had also expressed similar views. Dr. Adami endorsed these opinions of the American pathologists. Whatever the reason may have been, this paper, although original and quite remarkable as the production of a Canadian pathologist, instead of being received with favor, rather appeared to evoke a show of opposition.

To physicians and hygienists, who accepted as true the doctrines current two years ago as to the identity of human and bovine tuberculosis, and the infectivity of bovine tuberculosis to man, Dr. Adami's opinion sounded heretical, and his contention that Canadian export cattle were almost entirely free from the taint of tuberculosis seemed quite incredible. We do not know if Dr. Adami has since 1899 taken fresh ground, or if he has actually advanced as far as Koch, who took the world, scientific and non-scientific, by storm with his paper read at the Congress of Tuberculosis, London, February, 1901. Whatever Dr. Adami's attitude may have been when he heard that deliverance, or may be now, he certainly expressed opinions at Toronto in 1899, some of which were almost identical with those expressed by Koch in

1901, as, for instance, when he indicated that, in his opinion, bovine tuberculosis might be regarded as only a possible danger to the health of humanity.

The following quotations from Dr. Adami's paper will serve to illustrate his views in 1899:

(1) "For let my previous contention be kept in mind: that the danger of infection of cattle from man is minimal."

(2) "And when in addition to this we regard also *possible* danger to the health of humanity, surely it is our duty as medical men to support strongly any attempt on the part of the Government to bring about the prevention of this disease in cattle." The wording in the last sentence would seem to indicate that a struggle existed in the mind of the essayist, and the conclusion he wished his hearers to draw is not justified by the anterior premises of his argument. Professional men should not be urged to strongly support expensive and radical measures of prevention against a *possible* danger.

Dr. Adami dismissed the theory of tubercular infection from bovines to man through the eating of tuberculous meat as of small importance, owing to the cooking of the meat, the fact that the bacilli tuberculosis are present in the meat (muscle) in but small quantities, even in advanced cases of the disease, and said that "the principal means of infection from this source would be by contamination of the surface of the meat in the process of dressing by the knives and hands of the operator becoming smeared with the material from other regions, which are the seats of extensive disease."

Continuing, he discussed the chances of infection from the use of tuberculous milk, supporting his opinions by a report of investigations of his own, made at Outremont, P.Q., and came to the following somewhat unsatisfactory (to him) conclusion: "That whereas, in the first place the milk of animals not suffering from udder tuberculosis may contain bacilli; nevertheless, such milk is not of high infective power to the animal's calf, and that, therefore, the frequency with which the bacteriologist may, by inoculation into guinea-pigs, find the milk to be infectious, is not an absolute indication of its danger when employed as food for man."

He further says: "For practical purposes, therefore, I agree with Nocard, that, as regards milk-supply, local tuberculosis of

the udder is what has to be most especially guarded against, and this, not because the evidence at our disposal affords absolute proof of the transmission of tuberculosis from cattle to man, but because *the trend of the evidence is all in that direction.*"

The trend of Dr. Adami's evidence was not in favor of the view that bovine tuberculosis is communicable to man through milk, but he preferred to cling to the theories advocated by other experimentalists, instead of the result of his own observations.

He knew that Theobald Smith's views on the non-communicability of human tuberculosis to bovines were correct, and he so stated the case. He knew that, in a cultural and morphological way, bovine and human bacilli tuberculosis were not the same, but he clung to Nocard's theory that they were different races of tuberculosis, and not different species, and so just missed the discovery recently announced by Koch. Had he taken tubercular material from the mesenteric gland of a patient who had died of intestinal tuberculosis, and injected it hypodermically into a non-tuberculous cow at Outremont, he would not only have been able to state that human tubercle bacilli are non-infectious to bovines, but that the human tubercular material he had injected into the animal was not of animal but of human origin. Dr. Adami has missed a great opportunity. Neither Koch nor any other experimentalist may, for a long time to come, be able to publish cases demonstrating that bovine tuberculosis cannot be made infective to man, although Prof. Baumgarten's cases are open to that construction (*vide Brit. Med. Jour.*, Sept. 7, 1901, p. 635). Koch's distinguishing merit in this discovery is, that being able to tell the difference between human and bovine tubercle (an advantage which Dr. Adami also possessed), he went one step further, and after cultivating in pure culture the tubercle bacilli found in a sample of human tubercular material, and subsequently injecting the same hypodermically into an animal, he ascertained by its behavior in the animal whether it came from a bovine or human source. If from the latter, its pathological effects were practically nil, if from the former they were virulent. His conclusions were obvious; human and bovine tuberculosis are not identical; human tuberculosis is not infectious to bovines; human tuberculosis is not of bovine origin. The demonstration of the proposition that man is not susceptible to bovine tuberculosis is not yet made; but Koch says that "if such a susceptibility really exists

the infection of human beings is but a very rare occurrence." It cannot be said, therefore, that Dr. Adami forestalled Koch's discovery, or that his position is identical with Koch's. Dr. Adami, however, deserves a credit which he does not seem to have received, for throwing doubt upon the frequency of the transmission of tuberculosis from cattle to man, in the paper read in 1899 before the Canadian Medical Association.

J. J. C.

EXPERT MEDICAL EVIDENCE IN COURTS OF LAW.

DURING the past month unfavorable comments have appeared in the press in reference to the medical expert evidence given at the Sifton trial for murder at London, Ontario. The general burden of complaint is that the giving of opinion evidence at trials is not one of the proper functions of physicians; that, unless they speak with certainty they should hold their peace, and that admissions of doubt on their part render their testimony valueless. In fact, according to these views, the medical witness should be permitted only to enlighten the Court on the demonstrated facts of medical science, to the exclusion of theories. As illustrative of the entirely different judgment entertained of the function of a lawyer engaged in criminal cases one newspaper says:

"It is recognized as the privilege, and perhaps the duty, of the advocate to divert the attention of the jury from facts inconvenient to his client by such means as he may be able to command, and no popular discredit attaches to him for his efforts in this direction, rather the opposite." In other words, the advocate for the defence is allowed to play his role, to contend that his client is innocent, to produce evidence in support of that theory, to hamper the proceedings of the Crown by every legal device, to ridicule, browbeat, and confuse opposing witnesses so as to discredit their evidence and persuade the jury that it is of little value. At a certain stage of the trial the advocate addresses the jury, uses every argument he can adduce to persuade them to accept his theory, and appeals to their tenderest sympathies, with all the subtle power "that takes the reason prisoner" and makes men stultify themselves. All this is considered perfectly proper, and in fact the duty of the advocate for the defence. On the other hand, the counsel for the Crown is equally strenuous

in endeavoring, by all lawful means, to persuade the jury that the prisoner is guilty.

Owing to the value attached to the opinions of learned physicians, they are introduced by lawyers into the conduct of a case either on the one side or the other, in order to influence opinion and gain a verdict. If it is the privilege and duty of an advocate to divert the attention of the jury from "inconvenient facts" by such means as he may be able to command, he is justified in securing the services of a highly-educated man, or men, who have special knowledge of the matters to be threshed out before the jury, so as to aid him in gaining that end. A medical witness also has a right to form an opinion based on the evidence submitted as to the theory which, to his mind, most clearly explains the question investigated by the Court. He has also the right to aid and assist counsel in weighing medical evidence, and eliciting the credibility of medical witnesses, who hold views of the case in question opposite to those which he holds.

When a physician appears to give an expert opinion in the case, he is called either by the Crown or the defence, and ceases to be an impartial witness when he adopts the theory of the one or the other side. Independent medical witnesses are not wanted in the witness-box.

It has been suggested that an amendment of the law of evidence should be introduced, which would exclude expert medical evidence altogether in criminal cases, except when called on by the Court and paid out of public funds.

This suggestion is open to serious objection, because it rests on mere assumptions, viz., that all medical knowledge is positive, fixed and unalterable, that in a doubtful case there is but one theory adequate to explain a certain assemblage of circumstances or facts, and that one or several medical men, consulted about such a case, should accept one explanatory theory, to the exclusion of others.

Without discussing the pros and cons of these assumptions, we take it for granted that while medical science is positively certain of an immense number of facts, which have been garnered in many fields, she is making advances every day in comparatively unknown regions, so that the real value of some of her acquisitions being undetermined, legitimate differences of opinion in unsettled questions are permissible. It is quite otherwise when a

scientific truth has been determined; argument is then unnecessary. It would certainly be creditable to medical science if she could solve most of the riddles proposed in the courts; but, in the absence of facts, theories must be considered, differences of opinion must exist, and physicians have surely as much right to differ in opinion as other men.

The system of trial by jury, instead of leaving the decision of a case to a judge, is founded on a struggle between two opposing sides, and truth is supposed to be made apparent to the jury from the clash of conflicting opinions. Medical expert evidence, therefore, as part of the evidence in a given case in a court of law, will have to be taken by the jury for what it is worth—definitive and conclusive in some instances, indefinite and of little value in others.

If the present system of presenting opposing theories in order to solve a debatable case were abolished, what would be the result?

To place a medical expert in the position of sole medical adviser to a judge in criminal cases would, *de facto*, make the former sole medical expert to the jury, would give him a despotic influence in cases of life and death, and would prejudice the public mind against what would seem a narrow view of an important function, and a one-sided system of administering justice.

If, on the other hand, a judge were allowed to consult several medical experts on doubtful matters requiring elucidation in a given case, he would probably accept the opinion which, to his mind, would seem most in keeping with the other evidence; but if he were to act on such advice he would be assuming a definite and final responsibility, merely on probable grounds. Moreover, such a system of administering justice would be subversive of trial by jury, because the expert advice supplied for the information of the judge would be limited to the judgment of one man, instead of influencing the minds and regulating the conduct of twelve men.

J. J. C.

THE INDIAN MEDICINE MAN.

PROF. J. F. W. ROSS delivered on October 1st in the Biological Building the opening lecture of the winter session of Toronto University Medical Faculty. The students turned out in full force, and the medical profession was well represented. The

Doctor chose as his subject "The Indian Medicine Man and His Work." The lecture was full of interest, and gave evidence of much research and study. The illustrations by means of a lantern added materially to the interest and to the proper understanding and appreciation of the information conveyed in a most entertaining manner. Dr. Ross went very fully into the ceremonies which attended the different years, the graduation of members of the Mide Wiwin, or Grand Medical Lodge and Medical College, and discussed its rites, its teachers and its objects. Graduation was divided into four degrees, a year elapsing between each. Besides the Mide there were, he pointed out, the Wabeno, or Men of the Dawn, and the Jessakios or Jugglers. The symbolical and mystical features of the various degrees, the positions of the sacred posts and the decorations of the lodges, which were square in form, and situated east and west, together with the distinguishing marks worn on the face by the Mide of the various years, and the sacred objects used were illustrated. It was also demonstrated that there were duly certificated female practitioners among the aborigines. The representation of several of the "parchments" issued by the Grand Lodge to graduates was studied with interest by the graduates. The lecturer gave the aborigines credit for possessing a considerable knowledge of the more important organs of the human body and their functions, and related instances of remarkable success in surgery, the treatment of wounds, etc.; an illustration of a skull was thrown on the screen to demonstrate that the ancients understood and practised the art of trephining. In medicine, too, the aborigines of this continent possessed considerable skill. In the treatment of fever they used the "cold pack," as does the profession of to-day, and representations of the "sweat bath" showed that they also used this method to assist in giving freedom and vigor to the mind and suppleness to the muscles.

In conclusion, referring to the curriculum of to-day, the lecturer stated that some studies might be curtailed with profit, while others should have more attention paid to them. He advised the students to be diligent, observant and thoughtful, and to combine physical with mental exercise.

EDITORIAL NOTES.

Is Cancer Curable?—A. Adamkiewicz replies to this interrogatory in a paper published in *Berl. Klin. Woch.*, 10th June, 1901, No. 23, p. 622, which has been abstracted by J. Dumont in *La Presse Medicale*. The patient was a woman, who one year ago exhibited on examination a cancer of the uterus in an advanced condition. The round ligaments and the vagina were attacked; the rectum and the bladder were liable to be attacked at any time; in short, so extensive were the lesions that Professor Albert did not think that an operation would be justified. The medical man attending the case undertook to employ hypodermic injections of Adamkiewicz's Caneroin. A happy result rapidly ensued. The hemorrhages and pains disappeared, sleep and appetite returned. On local examination being made, softening and diminution in volume of the neoplastic mass were observed. Since that time the retrograde march of the lesions has continued in a marked form, and one year from the beginning of this treatment (the patient was seen at the beginning of last May) the following conditions were present: The smoothness and normal capacity of the vagina have been restored; the vaginal fornices are quite free, the meatus urinarius, which had been infiltrated and everted, is at present wrinkled. On the other hand, the uterus is voluminous, lumpy, indurated, and adherent to the abdominal walls, although quite free from pain. Except a very large ulceration of the posterior lip of the neck of the uterus the latter part looks quite normal. Adamkiewicz proposes a theory to explain the conditions, to the effect that caneroin exercises its action only on young cancer cells in progress of growth. These cells at first soften and are then absorbed and eliminated. In large, old cancers certain pathological elements do not react under the influence of caneroin, or, at all events, if necrosed they are not eliminated and remain *in situ* in the midst of healthy tissues, in which they form indurated nuclei of greater or less extent. From this remarkable case Adamkiewicz concludes: (1) That cancer is curable; (2) That the problem of the cure of cancer should be considered to be scientifically solved. It may be added that caneroin is a substance obtained from cancer, and is a supposed alexin against cancer poison. It has been used hypodermically for the cure of cancer.

To Prevent Malaria.—Some of the measures recommended by Plehn for the prevention of malaria, measures founded on the scientific labors of Celli and Grassi in Italy, and Ross in India, are: The use of quinine, but in smaller doses than those formerly used; its use should be continued for a long time, particularly in the chronic forms of the disease, which are the hardest to cure. New towns to be founded in tropical regions should be placed at a considerable distance from streams, and particularly from the vicinity of stagnant water. The streets should be made wide, should intersect each other at right angles, and be well paved. The houses should be exposed to the action of the wind, each of them being situated in a well-isolated, large garden, in which there should be no trees, which serve to protect mosquitoes from sun, wind and rain. For the same reason no climbing plants should be permitted to grow, or no dark corners be allowed in which the anopheles can easily find shelter. Badly-lighted stables swarm with these mosquitoes. In the interiors of the houses everything should be bright, well aired, spacious, and exposed to the prevailing winds. The good ventilation of a house is not at all spoiled by the presence of mosquito-nets on the doors and windows, and the health of persons who sleep in such a house is not sensibly affected thereby. According to Grassi, who made special studies of the subject near Pæstum, these measures are all the more likely to be efficacious, owing to the fact that only from one to two per cent. of the anopheles are affected by the hematozoa of Laveran.

The Treatment of Medical Shock.—Dr. Osborne says, in a paper read at the fifty-second annual meeting of the American Medical Association: "In all diseases or conditions in which there is a piling up in the blood of absorbed poisons, be they from typhoid or dysenteric ulcers, pus collections, malarial plasmodia or hemoglobin debris, cancerous disintegration, or catarrhal edematous mucous membranes, which are such fine culture-grounds for all germs, any treatment that hastens the evacuation of the excreted bile, impregnated as it is with toxins, made temporarily inert by the good offices of the liver mechanism, will prevent systemic and nervous poisoning and ultimately vasomotor disturbance and medical shock. Dr. Osborne would prevent medical shock in acute febrile processes by causing the emunctories to do good and proper work, or if one is impaired to increase the action

of another, and to keep as clean as possible every localized, suppurating or inflammatory process that may be going on. He discourages in such cases the use of coal-tar antipyretics and analgesics. In order to forestall medical shock, he promotes nutrition, stimulates the heart with alcohol, strychnine, coffee, or camphor, and stops too acute or too long continued acute pain. Should medical shock supervene, cardiac and vasomotor medication, viz., digitalis, should be given hypodermically, as the stomach will not absorb in the condition of shock. Small quantities of hot liquids taken into the stomach also do good by their warmth.

The Ponderability of Odorous Particles.—We notice in *Cosmos*, Paris, a description of a simple yet precise method for obtaining information about the weight of odorous particles. This system of weighing, which is the invention of Mr. Berthelot, consists in allowing the vapor of an odorous substance of known weight to fill a bottle. The substance is then removed and weighed again, and its loss of weight shows the amount of odorous matter in the bottle. A measured fraction of the perfumed air is then drawn off into another bottle, and this operation is repeated until the odor can be no longer perceived. Thus it was found that the limit at which iodoform could be perceived is less than 1-40th of one millionth of a gram (about 3-8ths of one millionth of a grain). Musk, it is said, would perhaps be perceived with a dissemination a thousand times greater; but it is certain that the limit varies with the observer, the sense of smell being more delicate in some persons than in others. The writer in *Cosmos* says, that "this simple and precise method may be used with any odorous bodies whatever." With regard to the ponderability of odorous particles, it is commonly observed that people apply a handkerchief to the nose or mouth, when they come into contact with a stench. The silk or linen fabric then acts as an imperfect filter, which strains off the solid particles floating in the air, with which the unpleasant odor is associated.

The Determination of Sex.—At a congress of Zoology, which met at Berlin last summer (*Le Progres Medical*, August 24th, p. 127), the question of the determination of sex was discussed. Professor Schenck, of Vienna, who, as is well known, maintains the opinion that a prenatal influence can be exercised in determining the sex of an infant by means of the alimentation of its mother, cited a number of experimental

facts in support of his theory. He declared that the sole actuating motive of his studies was a wish to discover the facts, and he characterized as untrue a rumor that he had been summoned to a certain European court, in which the children born to the monarch had, so far, been girls. In the ensuing discussion, which was very lively, Dr. Hanchekorne stated that, as a physician, he was opposed to Professor Schenck's theory, which he looked on as a positive social danger, the realization of which he would deeply regret.

A Defunct Company.—Chief Justice Meredith, sitting at Osgoode Hall, granted an order on the 15th ult. winding up the Physicians' and Surgeons' Supply Association, Limited, of Toronto, whose headquarters are in the Confederation Life Building. Mr. E. R. C. Clarkson was appointed provisional liquidator. There was something unusual about the order, inasmuch as it was granted on two applications—of Evans & Sons, creditors for \$700, and J. Stevens & Son Company, creditors for \$1,500. Other creditors are: Ontario Bank, \$2,900; Wampole & Company, \$800; Dr. Henry, \$400. The bank holds as part security a \$1,000 note, signed by the Executive Committee of the Association. The total liabilities are \$7,000, and assets nominally the same, including \$2,500 stock-in-trade, \$1,800 book debts, and \$1,500 unpaid calls due by shareholders. The directors of the Association are as follows: Dr. James Henry, Orangeville; Dr. John S. King, Toronto; Dr. J. M. Shaw, Keene; Dr. C. J. W. Karn, Picton; Dr. S. C. McLean, Spencerville; Dr. J. M. Stewart, Chesley; Dr. J. A. Robertson, Stratford; Dr. W. H. Alexander, Toronto; Dr. G. M. Brodie, Claremont.

First Egyptian Congress of Medicine.—We beg to acknowledge the receipt of a preliminary programme and a circular letter from Dr. Voronoff, General Secretary of the first Egyptian Congress of Medicine, to be held at Cairo, Egypt, December 10-14, 1902, under the patronage of His Highness the Khedive. Special attention will be devoted to diseases peculiar to Egypt, such as bilharzia, duodenal ankylostoma, bilious fever, abscess of the liver, etc. Reports and papers will also be presented dealing with the epidemic diseases, which of late years have appeared in Egypt and threaten Mediterranean ports, as well as preventive measures and quarantine. The final programme will be sent later, as well as information regarding the trip, reduced fares, etc.

Gravenhurst Sanitarium.—The main building of the Gravenhurst Free Hospital for Consumptives, which is being erected by the National Sanitarium Association for the poor and wage-earners of Ontario, is progressing favorably. The roof is about completed, and in view of the large number of men at work, the institution will probably be ready for occupation in the course of a few weeks. This new free hospital will be under the same management as the Muskoka Cottage Sanatorium. It will accommodate fifty patients at the start, and will be increased as fast as the money is forthcoming for that purpose. By using summer pavilions at least one hundred patients will be provided for during the greater proportion of next year. The hospital has fifty-six acres of park, and therefore may be extended almost indefinitely.

Double Acetate of Theobromine and Sodium.—Dr. D'Estrée (Brussels) shows that theobromine is one of our best diuretics. Unlike caffeine, it has a weak cardio-vascular action, but acts directly on the kidneys. To make it more absorbable it is prepared in the form of the double salicylate of theobromine and sodium, or diuretine, which proves rather irritating to the digestive passages. Dr. D'Estrée has tried the double acetate of theobromine and sodium, or azurine, a very soluble salt, which is also less caustic than diuretine, and has been well satisfied with it. Given in a dose of from 1 gramme to 0.25 per diem, azurine is said to have produced marked diuretic effects, the urine of the patient becoming not only more abundant but also containing more urea and urinary salts.

Koch's Bacilli in Scrofulous Lymphatic Glands.—G. d'Arrigo reports (*Centralblatt für Bakteriologie*, October 27th, 1900, t. xxviii., No. 16, p. 481) that by using a special method of staining in treating Koch's bacilli, he has studied scrofulous glands removed by surgical operation from persons ranging from four to twenty-eight years of age. From the examination he concludes that scrofulous glands are affected with an attenuated form of tuberculosis. Lymphatic glands offer barriers to the penetration of Koch's bacilli into the organism, stop it, destroy it, or weaken its virulence. At a subsequent stage they may become foci for the dissemination of tuberculosis.

Dog Liver Oil.—We notice in the *Journal of the American Medical Association* that dog-liver oil is being used in the United States as an infallible cure for consumption. Alluding to a

city in the United States, it says: "The gentleman who has the contract for the removal of dead animals from the streets has found that an oil prepared from the hearts and livers of dogs is a sovereign cure, and a number of cases are named where wonderful results are said to have followed its use." This is not a very new cure, after all. The writer has a patient, a Hebrew, who stated recently, that thirty years ago, when living in Berlin, Germany, he was cured of consumption by the systematic use of dog oil.

Gasterine (Gastric Juice of the Dog).—This agent has been used successfully in France in different cases of hypochlorhydria and in pronounced diarrhea. In many cases of weak stomach, diarrhea is secondary. The aliments leaving the stomach rapidly and being but slightly changed, prove irritating to the intestines. These secondary diarrheas are often benefited by the use of mixtures containing hydrochloric acid. Gasterine is thought to prove curative in a similar fashion.

PERSONALS

DR. ROBILLARD has resigned his position as Medical Health Officer of Ottawa.

DR. AND MRS. W. A. YOUNG enjoyed a couple of days at the Pan Am. last week.

DR. W. H. PEPLER returned a month ago after spending four weeks through the West.

CONGRATULATIONS to Dr. Alex. Primrose upon the birth of another little one a few weeks ago.

McMICKING—On October 13th, at his residence, No. 1 Washington Avenue, George McMicking, M.D., in his 77th year.

DR. J. E. CRAIG, of Ottawa, has accepted the appointment of resident physician at Porter's Island, to look after the smallpox patients.

DR. McCULLOUGH, son of Dr. J. McCullough, Spadina Ave., has returned from his ranch in the West, and will spend the winter in Toronto.

DR. VAUX, Chairman of the Provincial Board of Health of Ontario, who purchased the handsome residence of W. T. Murray, Esq., No. 66 Bond Street, has made his home in Toronto.

AMONG the medicos who have taken up equestrian exercise this fall, and can be seen in "the park" on these beautiful cool afternoons, is Dr. F. N. G. Starr. The Doctor is becoming an able horseman, and the sport is improving his good looks, if that were possible.

MR. FRANK A. RUF, President and Treasurer of the Anti-kamnia Chemical Company, St. Louis, has been elected Vice-President of the Fourth National Bank, St. Louis, Mo.

DRS. R. J. Wilson and Herbert Bruce, of Bloor Street, were enthusiastic members of the Decoration Committee having charge of making Bloor Street, east and west, presentable for "the Dook," God bless him!

It is to be hoped that the Board of Police Commissioners will take action without delay in the matter referred to in our recent editorial as to what would appear to be nothing short of a monopoly held by Coroner W. J. Greig, of this city, in the matter of city inquests.

DR. CHARLES SHEARD is practically rebuilding his residence on Jarvis Street. If the house when complete turns out to be anything like as handsome as his colonial cottage on the Island, there will be few residences on Jarvis Street which, in point of taste and beauty of outline, will excel it.

DR. J. M. MACCALLUM has been laid up with a nasty and painful attack of rheumatism, but is again improving. The Doctor has been much missed from Rosedale Golf Club for the past six weeks, as, with his Musselburgh swing, he has been establishing a new record over Rosedale course.

THERE were between forty and fifty doctors subpoenaed to give evidence, expert and otherwise, at the Sifton trial in London, Ont., a few weeks ago. Among those from Toronto put in "the sweat box" were Dr. Arthur Jukes Johnson, Dr. Harry B. Anderson, Dr. George Bingham, Dr. John Ferguson and Mr. Irving Cameron.

MR. SHINN, of Philadelphia, Pa., representing the Liberty Chemical Company of that city, called to see us during the past month in the interests of Thermol and other preparations made by that house. We understand that Elliott & Co. and Lyman Bros. & Co., Limited, of this city, are to act as Canadian agents from this date.

DR. ALBERT A. MACDONALD, of Simcoe Street, has the honor of being the first practitioner to use an automobile in making his city rounds. It is a Stanhope phaeton, with a full leather top and solid rubber tires, the motor power being electricity generated from a series of storage batteries, and was built by the Canadian Motors, Limited, Toronto, Ont. It is a very nice-looking trap, and has yellow striped gear. The Doctor pronounces it a distinct success, and says that he can save at least an hour in his afternoon's work alone. We understand that Dr. Jennie Gray intends to adopt this system of transportation also, and hope that other practitioners in Toronto will follow this good example, at least those who are guilty of driving horses not fit to be seen. Doctor, won't you please take this hint?

Correspondence.

The Editor cannot hold himself responsible for any views expressed in this Department.

UPON PROFESSOR KOCH AND MATTERS OF PRIORITY.

To the Editor of THE CANADIAN JOURNAL OF MEDICINE AND SURGERY.

SIR,—Remembering that the address upon “The Significance of Bovine Tuberculosis and its Eradication and Prevention in Canada,” delivered by me before the Canadian Medical Association in 1899, was first published in your journal, it is almost a duty on my part to accept your invitation to state fully my views as to my position in reference to Professor Koch and his London address—an address part of which covered much the same ground as that covered by me two years ago.

It is admittedly difficult to find fault with or see willingly any blemish in those we regard as great men; we would all picture our heroes, scientific or otherwise, as *sans reproche*. No one would dispute the credit due to Prof. Koch for the discovery of the bacillus of tuberculosis; indeed, in this discovery he has made a name that will go down through the ages, and has conferred a benefit upon mankind which it is impossible to estimate. But it has to be admitted that, since that discovery, his conduct towards other scientific men, working along similar lines, has been, to say the least, reprehensible.

It is held, and held rightly, to be the duty of scientific observers to acknowledge fully the work previously done by others, along the same lines, at least until such time as that work attains general acceptance. It is the duty of each worker before publication to make sure that he is not claiming for himself credit that is due to others. It is not easy always to discover such earlier work; it may be buried in some obscure journal or in the proceedings of some relatively little known society, but certainly nothing appearing in the leading journals of Germany, France, Great Britain and the United States ought to be passed over. It is very possible, and it happens not infrequently, that an active worker and writer occasionally, and by accident, fails to credit his fellow-workers; but when this failure to acknowledge the observations of others is frequently repeated, no excuse can be asked or can be accepted. Either the individual who commits the crime is absolutely callous, and has callously determined to aggrandize himself at the expense of others, or he suffers from a form of disease—from megalomania, by which we

mean that such an individual becomes so full of his subject, and of himself, that he regards every idea and every fact as his own whether the idea has previously been enunciated, or is the natural and independent development of his own line of work and thought, or has been in the first place obtained from the work and the writings of others.

We are inclined to think that the second is the more probable explanation in the case of Professor Koch.

When, for example, he announced the discovery of tuberculin, he had not a word to say with regard to the observations of the other workers who had previously investigated the action of the products of growth of the tubercle bacillus, among whom I may mention Crookshank, of London, and, if I mistake not, Buchner, of Munich. He took all the credit to himself. When next he described (and described imperfectly) his method of preparation of tuberculin, no credit was given to Roux and Nocard for the discovery that the tubercle bacilli would grow in media to which glycerin had been added, glycerinated broth being the medium from which he prepared the tuberculin. When later he gave his observations upon the chemical nature of tuberculin, not a word was said about the previous careful observations of Hunter and of others who had before him reached practically identical results, and, indeed, had made fuller researches. Only recently, taking up the subject of malaria, he has had the hardihood to take to himself all the credit for the discovery of the important part played by mosquitoes in the propagation of this disease, and has refrained from saying a word of due praise concerning the prior observations of Ross, and Italian and yet earlier American workers.

These facts are well known to those conversant with bacteriological literature, but such is Professor Koch's power and influence in Germany that younger men dare not disclose these matters in the public press for fear lest their careers should be injured, while his colleagues of professorial rank say nothing about the matter, fearing lest it should be thought that their motive was one of mere jealousy. It is left to those of other nationalities to bring forward these facts, unpleasant as they are.

In his recent address in London, which has caused so great a sensation not only in the medical world, but among all those in any way interested in the subject of tuberculosis, more than one example can be brought forward of this baneful habit of Prof. Koch. He describes there the experiments he has carried on during the last two years along with Prof. Schutz of the Veterinary College in Berlin. Six young cattle were fed on tuberculous sputum almost daily for seven or eight months; four repeatedly inhaled great quantities of bacilli, which were distributed in water and scattered with it in the form of spray; in others, sputum or tu-

bercle bacilli were injected under the skin; in others into the peritoneal cavity, and in others into the jugular vein. None of the nineteen cattle thus subjected to the action of the tubercle bacilli from cases of human tuberculosis showed any symptom of the disease. The result was different, however, when the same experiments were made employing tubercle bacilli from the lungs of an animal suffering from bovine tuberculosis. In such animals there was a rapid development of acute tuberculosis. Also, when swine were fed with material from tuberculous sputum from consumptive patients, they remained healthy and grew well, whereas those other swine which received bovine tubercle bacilli for the same period suffered without exception from severe tubercular disease. Several experiments were made with asses, sheep and goats, with similar results.

"Our experiments," says Koch, "are not the only ones that have led to this result. If one studies the older literature on the subject, and collates the reports of the numerous experiments that were made in former times by Chauveau, Gunther and Harms, Bollinger and others, who fed calves, swine and goats with tubercular material, one finds that the animals that were fed with the milk and pieces of the lungs of tubercular cattle always fell ill of tuberculosis, whereas those that received human material with their food did not. Comparative investigations regarding human and bovine tuberculosis have been made more recently in North America by Smith, Dinwiddie, and Frothingham, and their results agree with that of ours. The unambiguous and absolutely conclusive results of our experiments are due to the fact that we chose methods of infection which excluded all sources of error, and carefully avoided everything connected with the stabling, feeding and tending of the animals that might have a disturbing effect on the experiments."

The impression here given upon first reading is that earlier investigators, and even the more recent investigators in North America, obtained ambiguous and not absolutely conclusive results, and that to Koch and Schutz is due the credit of conclusively proving that under normal conditions cattle are immune to bacilli obtained from cases of human tuberculosis, and that Theobald Smith, Dinwiddie, and Frothingham did not exclude all sources of error. The facts are, however, that in this matter Professor Theobald Smith, in 1898, had performed, and published in the *Journal of Experimental Medicine* equally careful and equally conclusive observations upon a large scale, while Frothingham's observations, which preceded Smith's, cannot be attacked save that the number of animals experimented upon was smaller, and Dinwiddie's, which followed Smith's, are as precise as those of Theobald Smith. To these observers certainly belongs the credit which Koch would arrogate to himself and Schutz. Theobald

Smith is well known as a model of extreme accuracy and careful work; he occupies the position not merely of being a leading American bacteriologist, but is recognized as one of the first among bacteriologists of all countries; he obtained cultures of the tubercle bacilli from seven different sputa of human beings suffering from phthisis, and from six different cattle suffering from the disease. With these he compared cultures obtained from the pig, the cat, from the horse, and from a pet coati. He inoculated these into a large number of perfectly healthy cattle, and found marked differences, just as did Prof. Koch at a later date, when he employed the human and bovine bacilli respectively. The difference he showed was especially well marked when subcutaneous rather than intraperitoneal inoculations were made. Koch, in another portion of his address, takes credit to himself for this same observation. Smith's results show that in cattle treated identically and given equal quantities of growths of tubercle bacilli emanating from man and from cattle respectively, in the former only a localized and thus non-infectious disease is produced, in the latter a generalized and consequently infectious disease develops. Frothingham, Theobald Smith and Dinwiddie are workers in comparative pathology, and interested themselves particularly with the question as to whether tuberculosis is infectious from man to the domestic animals.

At the meeting of the Canadian Medical Association at Toronto on August 30th, 1899, I took up the fuller question with regard to the significance of bovine tuberculosis. I noted the observations of Smith, and pointed out that at the Experimental Station at Outremont the inoculations, so far as they had gone, confirmed those observations. Passing on from this, I inquired whether, if infectious from animal to animal, bovine tuberculosis is infectious from animal to man. I pointed out that, could a direct experiment be made, the determination would be easy and straightforward, but that this is just what we cannot do. I next took up the question of the cultural characteristics of the bacilli from the two sources, and showed that they were not identical, and both these methods of inquiry failing to answer the question, asked if there were any evidences of absolute proof that by natural means tuberculosis has been conveyed from cattle to man. Here I laid down that when we come to examine into the reported cases, we are struck by the lack of positive evidence afforded in the majority of cases on record. Next the statistics with regard to the frequency of intestinal tuberculosis in children was discussed, and it was shown that, following Dr. G. F. Still, respiratory infection is commoner in children than is alimentary, in about the ratio of 57.2 to 23.4, and the conclusion was drawn that it must be admitted that among young children alimentary infection, while not so high as had been thought, is relatively high. Then quoting

a few cases from the literature, I concluded that the evidence, while not absolutely convincing, is strongly in favor of the view that tuberculosis can be conveyed through the milk of animals extensively diseased.

This paper of mine, throwing doubt as it did upon the frequency of infection through milk, caused, it may be remembered, not a little sensation. It was published both in the *CANADIAN JOURNAL OF MEDICINE AND SURGERY*, December, 1899, and in the *Philadelphia Medical Journal* of the same month. Ravenel, Dinwiddie and others criticized it in the leading medical journals and referred to it in sundry reports. Thus for two years this question of the infectiousness of milk has been actively discussed on this continent. It may be that our Canadian journals have no very large circulation outside Canada, but the *Philadelphia Medical Journal* takes a first rank among the American weekly journals of medicine. Now, Professor Koch, in his address, brought forward a parallel argument. To say the least, it was his duty to point out that others before him had discussed this subject of the transmission of tuberculosis by means of milk, instead of leaving us to gather that he is the first responsible worker who has clearly enunciated that "if such a susceptibility really exists, the infection of human beings is of but very rare occurrence" (I quote from Professor Koch). I cannot but imagine that my paper must have found its way to Professor Koch, or at least to the Institut für Infektionskrankheiten in Berlin, of which he is the director, for copies of the address were asked for by the German Consul in Montreal for transmission to his Government, and such copies were sent and would surely have been referred by the Government to its leading official in connection with infectious disease.

This matter of priority is but of secondary importance in science, and had this been an isolated case not a word need have been said about it; but when Professor Koch has so repeatedly taken to himself the work of others, it is but right that the matter should be brought forward.

I am, sir,

Yours faithfully,

J. GEORGE ADAMI.

J. H. R. Molson Pathological Laboratory, McGill University,
Montreal, October 5th, 1901.

Postscript.—Since I wrote this letter, you have very courteously forwarded to me the editorial upon this subject written by one of your colleagues. That editorial is written so considerately that I can venture to make no criticism upon it. The writer has clearly appreciated the position I was in when I delivered the address, that of wishing to state definitely my doubts as to the

frequency of tubercular infection from cattle to men, without at the same time doing what Koch has unfortunately accomplished, namely, causing a general distrust and unsettlement in the community as to the absolute necessity of striving with all our power to eradicate bovine tuberculosis, or causing the agricultural interests to become opposed to governmental and municipal action directed towards accomplishing such eradication. What I regard as almost criminal in connection with Professor Koch's London address is that he was satisfied to lay down his belief that bovine and human tuberculosis are distinct, and not intertransmissible diseases, without calling full attention to the fact that, even if this be so, it should not one whit lessen our endeavors to stamp out by every possible means a scourge which yearly is inflicting an enormous pecuniary loss upon (more especially) European communities. It is no valid excuse to urge that his address was not upon the dangers of bovine tuberculosis, but upon the modes of transmission of tuberculosis in and to man. Considering the occasion, the audience, and the certainty that his views would be published *urbe et orbi*, what he had to say with regard to the danger of bovine tuberculosis should have been so guarded as to limit sharply the effects of his statement to the matter in hand, and not to influence the work of diminishing the spread of bovine tuberculosis. For as he uttered his statement his address most unfortunately, and, as I say, almost criminally, is having this effect.

One criticism, or rather amplification, of the editorial I may be permitted to make. I still believe, as I did when the address was delivered two years ago, that *under special conditions and occasionally*, bovine tuberculosis is transmitted to man. The evidence is too strong to have any doubts about this. I believe that such transmission is rare. It will be seen, upon careful study of Koch's address, that he also admits the possibility of occasional transmission, though he minimizes the danger from this more than I am prepared to do. But certainly I deny that we are dealing with two distinct species of tubercle bacilli. As stated in my report to the Department of Agriculture for 1899 (Report of the Minister of Agriculture, 1899, p. 140), we are dealing with races of one species of microbe modified by transmission through animals of different species. And as an illustration of my position I there cited the case of the relationship of small-pox to cow-pox, the illustration which, I may note, was employed by Lord Lister in his criticism which immediately followed the delivery of Professor Koch's address.

J.G.A.

Montreal, October 14th, 1901.

The Physician's Library.

BOOK REVIEWS.

The Principles and Practice of Medicine. Designed for the use of practitioners and students of medicine. By WILLIAM OSLER, M.D., Fellow of the Royal Society; Fellow of the Royal College of Physicians, London; Professor of Medicine in the Johns Hopkins University, and Physician-in-Chief to the Johns Hopkins Hospital, Baltimore; formerly Professor of the Institutes of Medicine, McGill University, Montreal; and Professor of Clinical Medicine in the University of Pennsylvania. Fourth edition. New York: D. Appleton & Co. Canadian agents, The Geo. N. Morang Co., Limited, Toronto. 1901.

The author of this volume, a work which has made a very enviable name for itself, pays a most becoming compliment to those who were his teachers before he left the land of his birth, by placing upon the page following the title page of his book the following words:

TO THE MEMORY OF MY TEACHERS

WILLIAM ARTHUR JOHNSON,
Priest of the Parish of Weston, Ontario.

JAMES BOVELL,
Of the Toronto School of Medicine and of the University of
Trinity College.

ROBERT PALMER HOWARD,
Dean of the Medical Faculty and Professor of Medicine,
McGill University, Montreal.

No one will accuse us of being fulsome when we state that in medicine the name of William Osler stands for scientific attainment, and that anything coming from the pen of our distinguished countryman can and will at once be accepted as the best. Osler's "Medicine" has now reached high-water mark, and is looked upon as one of the very best works on Practice in print. We have looked carefully over the fourth edition, and have read with a great deal of pleasure the article on typhoid fever. This chapter has been almost entirely rewritten, and, what will be most valuable,

Dr. Osler has given us the benefit of his clinical experience in typhoid at Johns Hopkins Hospital. In discussing the eliminative and antiseptic treatment, regarding which the author and our friend, Dr. W. B. Thistle, of this city, have had some discussion, Dr. Osler says: "The systematic use of purgatives is, in my opinion, very bad practice. No one feature in the disease is, I think, more serious than persistent diarrhea. The preliminary calomel purge, so much used, is not necessary. Graves remarked that patients who escaped active purgation before admission to the hospital usually had much less bowel trouble."

The author has added several new articles to his fourth edition, *e.g.*, arsenical poisoning, aphasia, congenital aneurism, adiposis dolorosa, splenic anemia, acute tuberculosis, surgical treatment of aneurism and scurvy, Meniere's disease, etc.

The fourth edition of Osler's "Medicine" is a volume in every way complete, and contains all in the practice of medicine required by the most ardent practitioner. The author is to be congratulated upon the result of his labors.

Surgical Technic: A Text-Book on Operative Surgery. By FR. VON ESMARCH, M.D., Professor of Surgery at the University of Kiel, and Surgeon-General of the German Army; and E. KOWALZIG, late first assistant at the Surgical Clinic of the University of Kiel. Translated by Prof. LUDWIG H. GRAU, Ph.D., formerly of Leland Stanford Junior University, and WILLIAM N. SULLIVAN, M.D., formerly surgeon of the U.S.S. *Corwin*, assistant of the Surgical Clinic at Cooper Medical College, San Francisco. Edited by NICHOLAS SENN, M.D., Professor of Surgery at Rush Medical College, Chicago. "Kurs und Bundig." With 1,497 illustrations and fifteen colored plates. New York: The Macmillan Company. London: Macmillan & Co., Limited. 1901.

The name of Esmarch has been to many of even the now older surgeons a household word in the art of surgery for years and years, now held only in memory. Those of us who were medical students in the early eighties can well remember how Esmarch's bandage was held up to us as a model to be borne in mind and put into practice. Esmarch as a surgeon is known the wide world over, and nothing could have been more appropriate than that his works be presented to the English-speaking profession in one volume. We feel that this volume will be hailed with delight, and will make a record sale. Dr. Senn was wisely chosen as editor, his name being held in the highest esteem by a large number of followers in the United States and Canada.

The work of those who undertook the necessary amount of translation to accomplish this feat has been no easy task, and, judging from the manner in which each subject is presented, we

feel that Drs. Grau and Sullivan have adhered as closely as possible to the original author's meaning and intentions.

This book represents naturally a considerable amount of boiling down of superfluous and unnecessary matter, but it is all the better for this. The illustrations are very fine, and improve the value of the volume exceedingly. Dr. Senn has in many places added notes where he thought it wise, but those he has bracketed.

The Macmillan Company deserve great praise for the beautiful manner in which they have done their part of the work. The paper is superfine and heavy, the text most legible and clear, and the half-tone and colored plates very well executed.

Progressive Medicine. A quarterly digest of advances, discoveries and improvements in the medical and surgical sciences. Edited by HOBART AMORY HARE, Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia; Physician to the Jefferson Medical College Hospital; Laureate of the Royal Academy of Medicine in Belgium, of the Medical Society of London; Corresponding Fellow of the Sociedad Espanola de Higiene of Madrid; Member of the Association of American Physicians, etc.; assisted by H. R. M. LANDIS, M.D., Assistant Physician to the Out-patient Medical Department of the Jefferson Medical College Hospital. Vol. III., September, 1901: Diseases of the thorax and its viscera, including the heart, lungs and blood vessels, dermatology and syphilis, diseases of the nervous system, obstetrics. Philadelphia and New York: Lea Bros. & Co. 1901.

Among the contributors to "Progressive Medicine" for the current year appears such names as Drs. Henry B. Baker, Lansing, Mich.; J. Chalmers Da Costa, of Jefferson Medical College; W. B. Coley, of New York; William Ewart, of St. George's Hospital; W. S. Gottheil, of the New York School of Clinical Medicine; A. L. Turner, of Edinburgh, and our friend, Dr. A. D. Blackader, of Montreal. Of these, Drs. Ewart, W. S. Gottheil, W. G. Spiller and R. C. Norris contribute articles to Vol. III.

The section which interested us most was that devoted to dermatology and syphilis, by Dr. W. S. Gottheil, of New York. It is full of the most interesting material, containing the latest facts upon most subjects coming under this department. The half-tone illustrations come out clearly and distinctly, especially those illustrating blastomycosis, chromophytosis of the palm and face, gangrenous dermatitis, epidermolysis bullosa and lepra tuberosum.

Lea Bros. & Co.'s work, "Progressive Medicine," has met with a very good reception at the hands of the profession. This is but

deserved, as the publishers spare no expense to give the subscribers from quarter to quarter and year to year the biggest possible value for a very small amount of money, and at the same time present the material in a manner worthy of one of the oldest publishing houses in America.

Diseases of the Intestines. By DR. I. BOAS, Specialist for Gastro-Intestinal Diseases in Berlin. Authorized translation from the first German edition, with special additions by Seymour Basch, M.D., New York City. New York: D. Appleton & Company. 1901. Canadian Agents: Geo. Morang Co., Limited, Toronto.

The pathology of the alimentary tract is assuming a much more important stage than formerly in the relationship to disease, and with much benefit to the public, and the analysis of the intestinal dejecta is becoming a much more important factor than formerly in the diagnosis and treatment of disease. The deductions which can be drawn after repeated and careful examinations of the feces, will fulfil a long felt want as an aid in the diagnosis of many diseases and conditions of the system, which the analysis of urine and sputum have done for other organs and organic diseases of the body. The Germans have long been foremost in the progress of pathology, and certainly the American edition of this German work has exemplified the thoroughness and progressiveness of the German author, who has produced such an excellent work.

The name of the publishers is a guarantee for the excellent quality of the presswork and binding of the book, which contains some 560 pages, and is well illustrated.

In addition to what has already been said, among the most important features of this publication are the anatomical and histological remarks and the physiologico-chemical remarks on the intestinal gases; improved methods for the examination of the patient, such as the employment of Roentgen Rays in the diagnosis of intestinal diseases, and methods showing the diagnostic value of the examination of the stomach contents, and of urinary examinations in intestinal diseases.

The dietetic and hydrotherapeutic treatment of intestinal diseases, massage and electro-therapeutics, together with injections and intestinal lavage, are among the many subjects treated in connection with the general therapeutics of intestinal diseases.

A suitable portion of the book is devoted to the surgical diseases of the intestine; among these are typhlitis, appendicitis, intestinal neoplasms, ulcers of intestines and diseases of the rectum, which are thoroughly dealt with in an up-to-date way.

The book is to be highly commended to the general practitioner, as affording one of the best dissertations on one of the most important, and in the past one of the most neglected subjects con-

nected with the diagnosis and treatment of the diseases of mankind. The author thinks the medical practitioner should bear the responsibility for operative interference in intestinal diseases, while the surgeon should be responsible for the technic of the operation.

He is inclined to believe with conservative surgeons that we have almost reached the limits of possibility in intestinal surgery, and advises the medical practitioner to keep pace with the times as to progress in abdominal surgery, and to use every opportunity to witness operations on the intestine, etc., so that he can be the better able to decide on the indications for operative procedures in diseases of the stomach and intestines, as well as of the liver and gall bladder.

E. H. A.

A Hand-Book of Pathological Anatomy and Histology. With an Introductory Section on *Post-mortem* Examinations and the Method of Preserving and Examining Diseased Tissues. By FRANCIS DELAFIELD, M.D., LL.D., Professor of the Practice of Medicine, College of Physicians and Surgeons, Columbia University, New York; and T. MITCHELL PRUDDEN, M.D., LL.D., Professor of Pathology and Director of the Department of Pathology, College of Physicians and Surgeons, Columbia University, New York. Sixth Edition, with 13 full-page plates and 453 illustrations in the text in black and colors. New York: Wm. Wood & Co. 1901.

It does not fall to the lot of many authors to live to see any of their works appear in the form of a sixth edition. There is nothing which could so conclusively prove the scientific value of any book, no matter what its subject might be, as the fact that its reception has been of such a character as to necessitate its being re-written five different times. Drs. Delafield and Prudden must indeed feel almost flattered at the manner in which their "*Hand-Book of Pathological Anatomy and Histology*" has been received by the profession. It can safely be said that this work is now looked upon as one of the standard text-books, and we feel that it ought to appear, not on some, but on all, of our college lists. We admit that the section which, in the sixth edition, took up our attention was that on "*The Method of Making Post-mortem Examinations.*" There is no doubt that there is too little knowledge prevalent among ordinary practitioners as to the correct manner of making autopsies. Frequently does it occur, when necessity arises for the opening of a cadaver, that the medical attendant has, owing to lack of practical knowledge in such matters, to employ some one better fitted to do the work than himself. This ought not to be the case, and if all would study carefully the first forty-two pages of Delafield and Prudden, they would never again have to divide their fee with another. This book contains much information of especial interest to coroners, Chapter II. covering such subjects as sudden death, suffocation, asphyxia, death from strangulation, hanging,

death from drowning, from electricity and from burning. Part II. is devoted to General Pathology, *e.g.*, changes in the circulation of the blood, atrophy and degeneration, hypertrophy, metaplasia, animal and plant parasites, the infectious diseases, tumors and lesions induced by poisons. Part III. covers Special Pathology, *e.g.*, lymph nodes, the spleen and thymus, the thyroid and adrenals; the circulatory and respiratory systems, etc. For a work on Pathological Anatomy, which is complete and thorough, we heartily commend "DeLafield and Prudden."

W. A. Y.

Nervous and Mental Diseases. By ARCHIBALD CHURCH, M.D., Professor of Nervous and Mental Diseases and Head of Neurological Department, Northwestern University Medical School; and FREDERICK PETERSON, M.D., Chief of Clinic, Department of Nervous and Mental Diseases, and Clinical Lecturer on Psychiatry, College of Physicians and Surgeons, New York. Third Edition, Revised and Enlarged. Handsome octavo volume of 870 pages, with 322 illustrations. Philadelphia and London: W. B. Saunders & Co. Canadian agents, J. A. Carveth & Co., Toronto. Cloth, \$5.00 net. 1901.

It takes but a short time for the reader of this work to recognize the fact that the authors have, in issuing their third edition, gone to a considerable amount of labor to make their book entirely modern, so that it can be looked upon as containing everything most recent in neurology and diseases of the mind. If there is one study in the whole of science requiring a clear, simple style of writing in order to make it at all interesting, it is the subject of this volume. It is quite common to hear men, who are even looked upon as litterateurs, say that for flat, uninteresting reading, commend them to the average book on nervous diseases. After looking, even cursorily, through "Church and Peterson," however, most readers will conclude that, except in one or two chapters, they cannot find this fault. The text is beautifully clear and the subject of each chapter or section so dealt with as to make the reader desire to continue the study rather than otherwise. The authors have divided the book into two sections, nervous diseases and mental diseases, the former subdivided into eight parts. Part I. includes the Examination of Patients; II., Diseases of the Cerebral Meninges and Cranial Nerves; III., Diseases of the Brain Proper; IV., Diseases of the Spinal Meninges and Spinal Nerves; V., Diseases of the Cord Proper; VI., Diseases of the General Nervous System with Known Anatomical Basis; VII., Diseases of the Nervous System without Known Anatomical Basis; and VIII., Symptomatic Diseases. Under the section on Mental Diseases are considered the Definition and Classification of Insanity, General Etiology of Insanity, General Symptomatology of Insanity, Examination of the Patient, General Treatment of Insanity, Mania, Melancholia, Circular and Epileptic Insanity, Dementia, Paranoia and Idiocy.

W. A. Y.

Diseases of the Nose and Throat. By D. BRADEN KYLE, M.D., Clinical Professor of Laryngology and Rhinology, Jefferson Medical College, Philadelphia; Consulting Laryngologist, Rhinologist and Otologist, St. Agnes' Hospital. Handsome octavo volume of about 630 pages, with over 150 illustrations and six lithographic plates. Price, cloth, \$4 net; half morocco, \$5 net. Philadelphia: W. B. Saunders & Co. Canadian Agents: J. A. Carveth & Co., Toronto.

The present volume is intended to answer the needs of students as well as practitioners. The extensive experience of the author has enabled him to be concise and definite as to treatment, thus giving the student more definite guidance in practice than he gets from some, in other respects excellent, text-books of the present day.

The opening chapter on Anatomy and Physiology and the one concerned with the pathology of inflammation of mucous membranes are, we think, excellent. They are written in a most succinct and interesting manner, making it very easy for the student to read, and, what is of more importance, he cannot fail to understand as he reads, so giving him a clear knowledge of these subjects, which are of the utmost importance in the making of correct diagnoses, and the rational treatment of so many of the diseases of nose and throat.

The article devoted to nasal syphilis is one of the clearest and most satisfactory we have seen, although we cannot agree with the author as to the efficacy of the protiodide in the treatment of secondary manifestations.

An important and most comprehensive article on a subject of the greatest practical importance to both patient and physician is that on Empyema of the Antrum.

The author's operation for removal of the tip of the uvula is one which may save no small amount of pain to the patient. The chapter on intubation of the larynx, although occupying only nine pages, is most exhaustive and complete, giving every direction and detail which the student or practitioner could possibly require.

The volume is an acquisition, forming a most complete and trustworthy reference and text-book.

J. D. T.

The Diseases of the Respiratory Organs, Acute and Chronic. By WILLIAM F. WAUGH, A.M., M.D., Professor of Practice and Clinical Medicine, Illinois Medical College, etc. Pages 221. Price \$1.00 net. Chicago: G. P. Engellhard & Company, 1901.

In the author's preface he states that "this book has been prepared because of the writer's belief that the treatment of acute affections of the respiratory organs has progressed far beyond that given in the text-books or practice," and again, "this conception

of therapeutics points to the active intervention of the physician at a period in the history of the case not only before the time when the diagnosis is usually made, but even before the malady has become fixed in the tissues."

On page 107 we find the statement that "this method of treatment has been put to the test of clinical trial by thousands of physicians, not those leaders whose mastery of the art would carry their patients through with almost any method, but the rank and file of the profession in city and country alike."

The method as spoken of above is best exemplified in the treatment of acute pneumonia. It is as follows: Aconitine amorphous, half a milligram (1-134 gr.); veratrine, same dose; digitalin, one milligram (1-67 gr.), given together every quarter, half, one or two hours, according to the predominance of the acute sthenic symptoms; substituting strychn. arseniate for the veratrine as asthenic conditions are manifested.

The author presumes that each agent, although of opposite physiological action, will be taken up by the tissue requiring its aid for the restoration of the physiological balance. We fail to find anything new in the administration of small and repeated doses of aconite, as this method was advocated by Ringer over a quarter of a century ago, and we would prefer clinical tests made by those "leaders whose mastery of the art" has made them known to us all, than take the statements of the rank and file, as we see them in some medical journals.

W. J. W.

A Manual of Surgical Treatment. By W. WATSON CHEYNE, C.B., M.B., F.R.C.S., F.R.S., Professor of Surgery in King's College, London; Surgeon to King's College Hospital and the Children's Hospital, Paddington Green, etc.; and F. F. BURCHARD, M.D. and M.S. (Lond.), F.R.C.S., Teacher of Practical Surgery in King's College, London; Surgeon to King's College Hospital, and the Children's Hospital, Paddington Green, etc.; in six parts. Part V.: The treatment of the surgical affections of the Head, Face, Jaws, Lips, Larynx, and Trachea, and the Intrinsic Diseases of the Nose, Ear, and Larynx. By H. LAMBERT LACK, M.D. (Lond.), F.R.C.S., Surgeon to the Hospital for Diseases of the Throat, Golden Square, and to the Throat and Ear Department, the Children's Hospital, Paddington Green. London and Bombay: Longmans, Green & Co., 39 Paternoster Row. 1901.

The fifth volume of this work is over 100 pages larger than any of the previous volumes.

The same plan is followed in this as in the previous numbers, viz., just enough symptomatology, pathology, and diagnosis for a good understanding of the subject in hand, while the treatment comprises the methods found best in the experience of the authors.

The chapters on intra-cranial injuries and intra-cranial suppura-

tion and on the plastic surgery of the face and hare-lip and cleft palate are especially good.

A very interesting chapter is devoted to focal epilepsy and brain tumors.

Electrolysis is treated in a very practical manner by Dr. Arthur Whitfield.

In addition to the usual chapters on the surgery of the head, neck and face, 194 pages are devoted to the intrinsic diseases of the nose, ear and larynx, by Dr. H. Lambert Lack, of London, making this volume of especial value to the general practitioner, as it will give him all he will likely require in these diseases and take the place of a special work. There are 145 illustrations, which add very much to the value of the work, especially in the part devoted to plastic operations.

The high reputation of the previous volumes is well sustained, and we can heartily recommend the work to our friends. W. J. W.

Atlas and Epitome of the Nervous System and its Diseases.

By PROFESSOR DR. CHR. JAKOB, of Erlangen. From the second revised German edition. Edited by EDWARD D. FISHER, M.D., Professor of Diseases of the Nervous System, University of Bellevue Medical College, New York. With 83 plates and copious text. Philadelphia and London: W. B. Saunders & Co., 1901. Cloth, \$3.50, net. Canadian agents, J. A. Carveth & Co., Toronto.

Works upon the structure and diseases of the nervous system are numerous enough, and some of them cover excellently well the subject, but until the appearance of this volume there has been accessible to English readers no work which presented in concise, comprehensive and thoroughly modern form the structure, pathology and diseases of the nervous system, and illustrated its texts by lithographs and other illustrations of the very best modern type. Indeed, no approach to the perfection of illustrations found in this volume is available to the general practitioner in English or any other language. In the localization and study of nervous lesions it will be found most helpful, and while treatment is subordinated to other departments, it still received a satisfactory degree of attention. Without the least hesitation the work can be commended to all who have occasion to deal with diseases of the nervous system.

It is simply marvellous that a work so richly illustrated can, by simultaneous publication in many lands and many languages, be furnished at such almost trivial cost.

N. A. P.

Encyclopedia Medica. Under the general editorship of CHALMERS WATSON, M.B., M.R.C.P.E. Volume VIII. Menstruation to Orbit. Edinburgh: William Green & Sons. 1901.

This volume contains no articles of more than ordinary interest, most of the subjects treated of requiring only brief notice. The

chief contribution is by W. Thorburn and R. T. Williamson, of Manchester, on injuries and diseases of the peripheral nerves. Reference is made to the epidemic of multiple neuritis occurring in the north of England during 1900, caused by the presence of arsenic in beer. Dr. E. S. Reynolds suggested the cause of the epidemic and first detected the presence of arsenic in the beer. Investigation discovered the contamination to be due to the use of sulphuric acid, containing arsenic as an impurity, in the preparation of the glucose and invert sugar used in the brewing of the cheaper kinds of beer. As a result of this discovery many of the physicians in the north of England argue that alcoholic neuritis is always due to some impurity and not to the alcohol itself, an opinion that our Scotch friends, in their loyalty to usquebaugh, are inclined to support.

Nestor Tirard writes an excellent, though rather brief, article on nephritis, and that on neurasthenia by Mrs. Garrett Anderson is clear and brief. F. E. Batten, of the National Hospital, London, contributes an excellent account of the various affections of muscles. Diseases of the nose are dealt with in ten articles by as many contributors.

Like its predecessors, this volume is also a credit to the publishers.

A. M'P.

The Diagnostics of Internal Medicine. A Clinical Treatise upon the Recognized Principles of Medical Diagnosis, prepared for the Use of Students and Practitioners of Medicine. By GLENTWORTH REEVE BUTLER, A.M., M.D., Chief of the Second Medical Division Methodist Episcopal Hospital; Attending Physician to the Brooklyn Hospital; Consulting Physician to the Bushwick Central Hospital; formerly Associate Physician, Departments of Diseases of the Chest and Diseases of Children, St. Mary's Hospital, Brooklyn, N.Y. With five colored plates and 246 illustrations and charts in the text. New York: D. Appleton & Co. Canadian Agents, The Geo. N. Morang Co., Ltd., Toronto. 1901.

Of all the many medical books published by the different publishing houses every year, we fear that a large percentage of them are not by any means as practical as they ought to be. Too many of them deal largely with theory and pay by far too little attention to the practical side of the subject. The books the physician of to-day requires, indeed, must have, if they are to be of any great benefit to him, are those which, waving theory to a great extent to one side, deal with practice and what he in his busy career meets with every day. Dr. Butler's "Diagnostics of Internal Medicine" at once struck us as magnificently practical and something which must prove somewhat of an example to other writers in the manner referred to. It is full of what the busy doctor is hourly in need of, dealing at length with symptoms and their diagnostic importance. Dr. Butler's book is one we would recommend all in

need of a thoroughly practical book and one which will be a valuable addition to their library, to purchase, and purchase without delay.

La Cure Pratique de la Tuberculose. Par Dr. P. PUJADE, d'Amélieles-Bains. Paris: Georges Carré et C. Naud, Editeurs, 3 Rue Racine. 1901.

Dr. Pujade has practised medicine for twenty years at Amélieles-Bains, and having made a special study of tuberculosis of the lungs in the patients who visit that health resort, is in a position to speak with authority on the methods, climatic, nutritive and medicinal, most useful in the treatment of tubercular cases. He believes in the value of a life in the open air both as a means of preventing an attack of tuberculosis and also of overcoming that disease after it has effected a lodgment in the body.

The chief value of Dr. Pujade's book consists in his way of presenting to the reader his clinical observations. He has studied the consumptive sleeping and waking, has carefully noted the success or failure of certain drugs in controlling symptoms due to the tubercular disease, and expresses the results of his experience to his fellow-practitioners with sincerity and in a very readable manner. This book will be of considerable assistance to the practitioner who wishes to familiarize himself with the clinical aspect of tuberculosis.

J. J. C.

A Text-Book of the Practice of Medicine. By JAMES M. ANDERS, M.D., Ph.D., LL.D., Professor of the Practice of Medicine and of Clinical Medicine, Medico-Chirurgical College, Philadelphia. Fifth edition, thoroughly revised. One handsome octavo volume of 1,297 pages, fully illustrated. Philadelphia and London: W. B. Saunders & Co. 1901. Cloth, \$5.50 net.

Dr. Anders, in this edition, has brought forward the bacteriological aspects of disease as it is known up to the present date. He has formulated for the medical student and clinician nearly sixty diagnostic tables, which will prove a most beneficial edition. He has eliminated all prescriptions except those whose value is beyond question. This work is undoubtedly one of the very best text-books of the period, and cannot but hold one of the foremost places in the medical literature of the present day.

The Canadian Agents are J. A. Carveth & Co., Toronto, Ont.

A. J. H.

The Making of a Marchioness. By FRANCES HODGSON BURNETT. Cloth. Toronto: William Briggs.

A charming story of nobly-born English people, with love, of course, "for the theme of the song." A fitting trifle to find its place within my lady's boudoir.

The Canadian Journal of Medicine and Surgery

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VOL. X.

TORONTO, DECEMBER, 1901.

NO. 6.

Original Contributions.

OBSERVATIONS ON THE NATURE AND TREATMENT OF PERNICIOUS ANEMIA.*

BY ALEXANDER McPHEDRAN, M.B.,

Professor of Medicine and Clinical Medicine, University of Toronto.

MANY causes and conditions have been adduced to account for the occurrence of pernicious anemia, but none of them is satisfactory—nothing definite is known as to the actual cause. The unknown factor is generally believed to be a toxine; on this theory only can the phenomena be accounted for. Among the English-speaking profession generally the toxine is looked upon as of gastro-intestinal origin, and that it acts on the blood of the portal system especially, causing rapid hemolysis, and that the other effects produced are secondary, developing in the course of the disease. Many German physicians, on the other hand, attribute the disease to a toxine effecting hemogenesis, as shown by the abundance of myeloblasts in the bone marrow and in the blood, indicating a reversion to the embryonal type. It is probable that both views are in part correct; that not only blood destruction, but blood formation, has been affected by a common toxemia, resulting in the genesis of abnormal corpuscles and the rapid destruction of the less resistant ones. The blood formation is atypical, and therefore to be attributed to pathological irritation rather than to excessive physiological stimulation.

The other changes met with, especially those in the spinal cord and peripheral nerves, are probably produced by the action of the same irritant, rather than as the result of the protracted anemia.

* Read at the meeting of the Association of American Physicians, Washington, May, 1901.

The irregular course of the disease, with its remissions and exacerbations, its irregular fever, the frequent disturbance of the mental condition, and the occurrence from time to time of vomiting and diarrhea, all indicate a common toxic cause.

The fact that the general condition does not bear a definite relationship to the blood state, goes to show that there is something else than the poverty in corpuscles on which it depends. This is well illustrated by the contrast between the condition of a miller who was able to do without difficulty all but the heaviest work of his mill and yet his blood only had 1,000,000 red corpuscles per c.mm., and that of a physician with over 4,000,000 corpuscles whose case is given in detail under the head of treatment. In the case of a member of the Canadian House of Commons, during the past year, there has never been more than 3,500,000 red corpuscles per c.mm., and yet he has not only regularly, and with marked ability, attended to his duties in the House, but has also conducted a most vigorous election campaign without either detriment or exhaustion. It is to be noted that in these as in all cases during well-marked remissions, the color-index is always near the normal, and that the corpuscles show less deformity and there are fewer nucleated ones among them.

That the condition is a toxemia is further indicated by the early occurrence of marked weakness. This, in most cases, is the first symptom, and it may be complained of a considerable time before the pallor is observed. It must, therefore, be independent of the anemia to which, as already stated, it is not proportional. In 22 cases observed during the last three years, with scarcely an exception, the first deviation from health noticed was the weakness; pallor followed soon afterwards.

It is to be observed also that the early occurrence of weakness, before, as a rule, any disturbance of the digestive tract is noted, does not support the theory that the toxine is of gastro-enteric origin, or that the digestive tract is the site of infection, but rather indicates that the changes in it are secondary to the toxemia. The disturbances of the stomach and bowels doubtless, however, increase the toxemia and therefore aggravate the condition.

The grounds for the opinion that the toxine is of gastro-enteric origin is the constancy with which disease or disturbance of the function of the digestive tract occurs. Few if any cases are met with in which there is not at some time a history of diarrhea and vomiting. In my 22 cases, diarrhea and vomiting occurred practically in all of them at some period of the disease, usually early, but sometimes later. The *post-mortem* conditions found in the relatively few cases examined do not afford much support to the theory, as in most of them all that has been found is atrophy of the gastric mucosa. Atrophy, however, occurs in gastric carcinoma and many other conditions which have shown no signs of

pernicious anemia, and then there is wanting evidence that the atrophy is not a late change in the disease. The only evidence of its early occurrence is the absence of free HCl from the gastric secretion, but free HCl is temporarily, and occasionally permanently, absent in many other conditions. During the remissions in pernicious anemia the appetite and digestion are often quite vigorous and a full diet may be as well disposed of as in health. At times there is every evidence of a secretion of HCl. Even in such malignant pyloric obstruction HCl may be restored to the secretion after the condition has been relieved by gastro-enterostomy.

Of late much importance has been attached to the probability of infection of the stomach by secretion from diseased gums around decayed teeth.* There is no doubt that such unhealthful conditions of the mouth may cause gastric catarrh, but that is far from proving it a cause of pernicious anemia. It is a question whether decayed teeth and diseased gums are found to exist in pernicious anemia in a greater proportion of cases than in other chronic exhausting diseases. There is such a vast army of people whose teeth are decayed and gums unhealthy, that it would require a marked connection between the condition of the mouth and any constitutional disease to establish a relationship of cause and effect even in a remote degree. In my 22 cases I have notes of the condition of the mouth in 17. One or more teeth were carious in ten of these, but nearly all of them were too well cared for to be a possible source of infection of the stomach. In only four of these cases were the gums unhealthy, three of them being only slightly affected and the fourth only fairly severely. In none was there a purulent secretion. It is further to be observed that these cases were not more affected by stomatitis or gastro-intestinal disturbances than were those whose teeth and gums were perfectly healthy.

One case at present showing very grave symptoms of pernicious anemia was under treatment two years for dilation and prolapse of the stomach with marked disturbance of its function. She was then quite thin and anemic, but the blood did not present the characters of pernicious anemia, and she made a very good recovery. Her present illness began during the past winter.

There was a history of pernicious anemia in the family of two of my cases. One of them, a young man whose death is just reported, had a brother who died of the same disease about four years ago. The history was typical, so that there can be no doubt as to the diagnosis. The other case is that of a lady about 70 years old. She had been ailing for nearly two years, and presented the characteristic symptoms in a marked degree. Two of

* William Hunter, *Medical Press and Circular*, April 3rd, 1901, p. 3537.

her brothers died a few years ago of a disease with similar symptoms and history.

Symptoms of the disease of the nervous system occurred in nine out of the 22 cases. In most of them there was only slight feeling of numbness in the extremities. In the case of Dr. J. E. E., not only the numbness, but ataxia was quite marked, and the mind was not quite vigorous and clear, even during his remissions, in some of which he was almost well.

In a lady of 68 years, there was a sensation of extreme coldness in the hands, that was distressingly painful at times. Her numbness was also marked. Severe neuralgia of the head, in all parts, but usually affecting one side more than the other, was the form the nerve symptom took in a young woman. The pain could scarcely be relieved, until a remission of all the symptoms occurred when she recovered fair health for a time; a relapse followed and terminated fatally six months later.

In estimating the value of the treatment in any disease, it is necessary to take due account of its natural course. This is especially true of pernicious anemia whose course is subject to such sudden and extreme changes. There are few diseases in which more marked remissions occur. It is not unusual for cases almost moribund to be about in a few days, and resume work in a few weeks. This was the history in a man last year. He had been ailing for some months, and in April was so prostrate that he could not be roused; blood-stained fluid flowed from his mouth, saturating his pillow. Yet in a few days he was sitting up, and returned to his home within a week; a distance of 100 miles. During the summer he considered himself well, and worked at his trade as a stonemason. He relapsed in the autumn, and spent the winter indoors with hopes of improving with the advent of the warm weather, but he grew worse rather suddenly and died in April last.

Another man, under my care at the same time, in his first attack two years before, was so prostrate that his physician told him he would not be able to return to his office for a year; but he was there in two weeks, and continued well, as he thought, for a year, when he relapsed, failing steadily with the usual exacerbations and remissions, until he died six months later.

Such cases as these show the inappropriateness of the name, "progressive" pernicious anemia. The disease is remittent, not *progressive*. Many run a milder and more persistent course, but in these also remissions occur and from time to time give promise of recovery. As in the case of the member of the House of Commons already referred to, the recovery may be almost complete, and remain unchanged for a year or more, but examination of the blood always shows some characteristic deviations, and a relapse may be confidently expected sooner or later. This has been my

experience with 22 cases observed during the last three years. Of these 14 have died, 4 are running the usual variable course, and the remaining 4 have not been heard from for some time.

Arsenic, since its introduction by Bramwell, has, until recently, been regarded as a specific in pernicious anemia. As the natural history of the disease has become better understood, confidence in it has gradually lessened, until now many regard it as of little value. The only case of complete recovery I have had was apparently due to its action.* The case was that of a physician who, in 1889, presented all the symptoms of pernicious anemia running an acute course. The red corpuscles were reduced to 750,000 per c.cm., and there was marked poikilocytosis, with much variety in size. Histological examination of the blood was not then further made. He took arsenic very freely for three months, causing considerable peripheral neuritis. His recovery was complete and he has since remained well. In the light of my more recent experience I am inclined to doubt the diagnosis, although it is not apparent wherein the error lies. In none of my late cases has arsenic proved of any service. In many of them it soon caused gastric irritation, and it had to be discontinued. The general acceptance of the theory of gastro-intestinal toxemia has naturally led to the use of various antiseptics. Of these, bichloride of mercury has been most generally used, both locally as a mouth wash as well as internally. My experience with it has unfortunately not been satisfactory; no tangible good has resulted from its use. The use of other antiseptics, as salol, resorcin, creosote, bismuth salicylate, bismuth naphtholate, have all been equally ineffective. Should this plan of treatment after due trial prove unavailing, it will go far to show that the theory of the origin of the disease from a gastro-intestinal toxine is incorrect.

With a view of supplying the blood with an artificial serum, and stimulating lymphagogue action and the excretion of toxine by the kidney, I have given normal saline subcutaneously in a few cases. I first gave it to an old man in the Toronto General Hospital who was so prostrate as to be almost unconscious. After the first injection of a pint he roused up and remained much better. A pint was given every second day, and on the alternate days the same amount was given by the rectum. The injections were so painful that, on recovering his normal mental state, he declined to continue them, and the saline enemata soon caused diarrhea, and had therefore to be stopped. He improved very much, and left the hospital in very fair condition, with over 3,500,000 corpuscles per c.mm. He returned four months later in a relapse, and died in a few days. In a few other cases improvement followed the subcutaneous saline, and in one there was apparently a recovery, but he may have replasped, as he has not been

* *Medical News*, October 10th, 1890.

heard of for some time. It is, unfortunately, too painful for most people to endure. The rectal administration should be as effective, but it cannot be continued on account of the diarrhea.

If, as Rumpf has lately pointed out, there is, in addition to the hydremic state of the blood, an excessive quantity of sodium chloride present, it would seem injudicious to add more water and NaCl to blood already surcharged with these constituents. However, if the solution stimulates the renal secretion, its use may so increase elimination from the blood as to more than counterbalance the evil effects of the introduction of more NaCl and water into the blood.*

The use of various other sera is illustrated by the history of the case of Dr. J. E. E.. He was fifty years of age, and practised in a neighboring city. Symptoms of weakness were noticed early in 1899, and pallor shortly afterwards. His teeth and gums were very healthy, but he suffered much from stomatitis, especially when his stomach was disturbed, as it was frequently. He could take arsenic only for a few days, as it caused nausea and vomiting, and normal saline by the bowel set up diarrhea. Bichloride of mercury was used for some time, both locally for the mouth and internally for the general toxic condition, without doing an appreciable good. Bismuth salicylate and other anti-septics were given from time to time for the diarrhea, which always recurred when the stomach was disturbed. His history was the usual one of mild exacerbations and remissions.

Plain horse serum was then given subcutaneously, in the hope of stimulating lymphatic action, but the only effect was to produce a severe urticaria. This was also the result of its use in three other cases. Then anti-diphtheritic serum was used, 2 cc. being given every second day. Its use in two previous cases was followed by gratifying results, doubtless *post hoc* rather than *propter hoc*. They were both old men, and one of them died the following year of acute diarrhea; the other two years later of senility. In Dr. E.'s case the serum had no apparent effect, nor had it in three other cases in which it was subsequently used.

During June anti-streptococcic serum was used, 5 cc. being given every two or three days at first, and later 10 cc., in all 125 cc. being used. During this time the temperature varied from 99 1-5 to 100 3-5. Some time after beginning the use of serum after each injection a free secretion of saliva occurred that was sometimes blood-stained. No apparent benefit followed the use of the serum.

He spent the summer of 1900 under most favorable conditions, living out of doors all day and sleeping in a tent at night. During the remissions the appetite was good and his diet highly nutritious. By September he was considerably better, but still his blood only

* *Berliner klinische Wochenschrift*, No. 17, 1901. Abstracted in *American Medicine*, Vol. I., No. 9.

contained about 3,500,000 red corpuscles per c.mm. In October on my advice he tried spermin (Poehl), 10 cc. being given in divided doses extending over ten days. He soon began to improve, and during November his blood contained 4,500,000 corpuscles per c.mm., and the hemoglobin rose to 85 (Fleishl). He looked quite well, and said he felt as well as ever. Corpuscles, however, showed considerable inequality in size, and a few nucleated ones could be found. He resumed his practice in a quiet way, but soon found himself unequal to the work. He became depressed; his mental condition, which had been affected early in his illness and was not completely restored even at his periods of greatest improvement, now became so much disturbed that he became difficult to nurse. He was confined to bed, although the blood showed only moderate deterioration, and in January, 1901, he grew suddenly worse, and died comatose.

In more recent cases I have advised moderate purgation, with the object of removing infective material from the bowel. At the same time intestinal antiseptics have been given, and such general remedies as strychnine, arsenic, iron, bone-marrow, etc. The results, however, have been no less disappointing than former experiences.

Notwithstanding all the good work that has been done, the cause and pathology of the disease are as yet quite unknown; and as to its effective treatment we are equally in the dark. No plan of management or treatment so far devised avails to cure the disease, or even, in most cases at least, alter its erratic course.

Before the recovery can be considered complete, the blood, on histological examination, must be found quite normal. A restoration of even the full complement of 5,000,000 red corpuscles per c.mm. is not sufficient, as that may occur in a prolonged and marked remission. Not a few of the cures reported have doubtless been remissions of this kind.

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HEMATOLOGY.*

 BY L. H. WARNER, A.M., Ph.G., M.D., NEW YORK.

WITH the beginning of the new century we have entered upon the brink of a new era in medicine and surgery. For his oration on "Surgery" before the fifty-second annual meeting of the American Medical Association at St. Paul, Minn., June, 1901, Dr. John M. Wyeth, of New York, selected the subject, entitled "The Value of Clinical Microscopy, Bacteriology and Chemistry in Surgical Practice (and well may I add) and Medical Practice." The address is a master-work by a master of our profession. Having selected the subject of Hematology for my address, I will preface same with a few of the remarks of Dr. Wyeth. (See *Boston Medical and Surgical Journal*, June 6th, 1901, p. 546.) To-day the blood is one of the most attractive subjects of laboratory research work, and although hematology is practically in its infancy, many valuable discoveries have already been made, and in the proper study of a patient a knowledge of the blood is as essential as that of the urine. A knowledge of hematology enables the surgeon to detect any form of anemia, and to determine whether it is a type of blood impoverishment which can be corrected, or whether it is of the graver or more pernicious forms which would either preclude an operation, or, if this were absolutely necessary, would enable him to announce to those entitled to information the gravity of the outlook; and here I am obliged to enlarge upon the essayist's remarks by saying: A knowledge of hematology is of the greatest value; in fact, a necessity to the general practitioner, to every practising physician or surgeon. Had Dr. Wyeth's address been other than one confined to the surgical section, I believe his closing remarks would have been, "Science and art of medicine are inseparable." "*Vox audita perit, littera scripta manet.*" We must admit that every advance in science provides a fresh platform from which a new start can be made, that the human intellect is still in process of evolution, and that the power of application and of concentration of thought for the elucidation of scientific problems is by no means exhausted. Scientific knowledge is no hereditary gift, but a tactful hard-earned acquisition. To become a skilled surgeon requires years of hard labor and study about the dissecting and operating room; to become a skilled physician, years of clinical work in the clinics and laboratory; to become a skilled hematologist requires years of constant study and experimentation in chemical, physiological, pathological and bacteriological laboratories and *post-mortem* dissections. Amongst the laboratory workers exists a natural ambition to maintain and increase the reputation of the branch of knowledge which he or

* Read at the Canadian Medical Association Meeting, Winnipeg, September, 1901.

she cultivates, and it is not infrequent that we hear that one of the privates of the rank and file has nullified the teachings of his teacher, all this due to energetic, conscientious study and research work. *Fas est et ab parvum ingenium doceri.* The study of hematology is divided into three branches: 1st. Methods of clinical examination of the blood; 2nd. Physiology of the blood; 3rd. General pathology of the blood; and I shall dwell upon these branches by mentioning, 1st. The imperfect practical manipulations; 2nd. The effect of medication upon the blood; 3rd. The blood in infectious diseases. The scientific apparatuses and appliances adapted for blood work are many, but the principally used ones are a good microscope provided with a 1-6 plain and 1-12 immersion lens, the Zeiss-Thoma counter for red and white corpuscles, the Fleischl Hemometer, blood needle, staining solutions, cover glasses and slides, hot oven and stage. But one American author, Dr. R. C. Cabot, of Boston, Mass., has furnished us with a text-book entirely devoted to the clinical examination of the blood, a brilliant work by a thorough student and teacher. *Fama semper vivat.* Amongst the European authors we find such authorities as Von Ehrlich, Engel, Ziemann, Von Limbeck, etc., and all these authors agree upon the following processes of obtaining a specimen of blood for microscopical examination: 1st. Obtain the blood by puncture; 2nd. Spreading of the blood; 3rd. Diluting the blood for counting purposes; 4th. Counting of red and white blood cells separately; 5th. Hemoglobin estimation; 6th. Estimation of specific gravity; 7th. Preparation of cover glass specimens; 8th. Staining; 9th. Differential counting; 10th. Bacteriological examination. Regarding the obtaining of blood by puncture we are taught as follows: Clean the lobe of ear or bear of finger of patient with a damp cloth and then rub against a dry one, so as to remove all gross dirt (some authorities advise washing the parts with soap and water or some antiseptic solution), and use a lancet or surgical needle for puncturing the skin. My findings based upon numerous tests reveal the fact that blood obtained in this manner will always show certain histological changes which are not shown in the blood of the same person if the blood is obtained by a method which I have adopted after many years' practical and experimental work in the field of hematology. *Facile est inventis addere.* Friction produced by rubbing the part from which the blood is to be obtained will cause a temporary thermogenesis, and subsequently a temporary increase of leucocytes in the blood-vessels near the irritated part. Cleaning of the parts with antiseptic solutions, or soap and water, will cause immediate resorption of some of the chemical substances of such antiseptic soap into the nearby tissues, and will cause, first, chemico-physiological and subsequently histological changes in the blood cells. I have the patient immerse his or her hand in lukewarm water for a few seconds, and permit the hand to dry by ordinary temperature. Should your patient see you exhibit a lancet or surgical needle, he

or she would at once be overcome with fright lest the procedure might hurt. The very fact of an existence, or even appearance of fright, will cause an instantaneous mild form of leucocytosis due to shock, sufficiently so to materially alter the blood picture, and to lead to a possible inaccurate diagnosis. I use a needle resembling a miniature scarificator, known as a blood needle, and which can be procured from any surgical instrument maker. This miniature instrument can easily be hidden in the palm of the hand; the needle can be regulated as to the depth of puncture desired. The puncture occurs instantaneously and causes a sufficient exudation of blood to make all the tests necessary for a complete blood examination. These differential procedures, although apparently of little note, are of the utmost value to arrive at a correct diagnosis by means of blood examinations. Our text-books quote correctly regarding the spreading of the blood. Wipe away the first few drops, and by smearing some around the puncture you will avoid having any dirt which had not been washed away mix with the blood, and collect about the fourth or fifth drop upon a perfectly clean cover glass, without allowing the latter to touch the skin. Drop the cover glass face downward upon a perfectly cleaned glass slide so that the force of the impact will help to spread the drop of blood. Place slide immediately under microscope, using the 1-12 oil immersion lens, and examine. Whenever a lengthy study of the fresh blood is required then the hot stage should be brought into requisition. The process of diluting the blood is universally the same, differing only as to the solutions to be used. For red cells a 1 per cent. solution of sodium chloride is my preference. Water alone breaks up the red blood cells, but NaCl preserves the cells. For white cells a 1 per cent. acetic acid solution with one drop of saturated solution of methylene blue, is my preference. To get exact results, and so as to save a great deal of labor, the Zeiss-Thoma counting apparatus, with two separate pipettes for red and white corpuscles should be used. The method of counting is so well explained in all text-books as to deserve no further notice at this time. For the estimation of hemoglobin the Fleischl Hemometer and the Gower's Hemometer are mostly used, and again our text-books fully explain the use and reading of these instruments. To estimate the specific gravity of the blood Hammerschlay's method is mostly used, and seems to work best. There exists no fixed rule regarding the preparation of cover-glass specimens, but, as a rule, we are taught as follows: Arrange a number of clean cover glasses near bedside of patient, and obtain the blood as previously stated. Collect a drop of blood upon a cover glass, and let the latter fall upon another cover glass in such a way that their corners do not coincide. The drop of blood will immediately spread over the whole surface, and as soon as it stops spreading slide off the top cover without lifting them apart. Dry the cover glasses over an alcoholic flame, or immerse for half an

hour in a solution of equal parts of ether and alcohol. *Audi alteram partem.*

Experimental work has taught me that the above teachings regarding the preparation of cover glass specimens will lead to grave errors. Measurements of the corpuscles of fresh blood and of corpuscles of the specimen prepared by above method, would show material differentiations, and therefore expert testimony regarding blood examinations relative to the measurement of blood corpuscles would not be admitted in any court of law while such differences exist. The heating of blood specimens over an alcohol flame will cause the coagulation of the serum albumen of the blood plasma, placing the fresh specimen in alcohol and ether will cause a shrinkage in the red corpuscles, and at the same time the dissolving of part of the nuclein within the nucleus of the leucocytes. After obtaining my blood specimen, and sliding apart the cover slips, I place the specimen under petri-covered glasses and allow them to dry. This requires but a few moments, after which I place cover glasses and all in a hot oven regulated at 98° Fahr. for twenty-four hours. The measurement of blood corpuscles in blood specimens prepared in this manner corresponds at all times with the measurement of the fresh specimen. The nucleus of the leucocytes in blood specimens of the same patient, but prepared according to the two different methods previously cited, exhibited a great difference in staining affinity. The methods of staining, differential counting, and bacteriological examinations of the blood are ably presented in all text-books; but the value of such work in aiding towards diagnosis depends, at least, in my opinion, upon the process employed in the obtaining of blood and the preparation of cover-glass specimens. Only by years of patience and strict research work have I been enabled to find the few errors I have cited, and well may I say: "*La patience est amère mais son fruit est doux.*"

Diet, hygienic surroundings and medication must be considered when studying the histological changes in the blood, and this takes us somewhat into the department of physiology, especially physiological chemistry. Physiology, as a science, is still in its infancy, although rapid strides have been made within the last few years. The incorrect understanding of the physiological action of some therapeutic agent, and the subsequent administration of such agent, under the belief that its physiological action is thoroughly understood, will often lead to grave results. Probably no other class of remedial agents is more frequently used than antipyretics, coal tar derivatives, or the various alkaloids of cinchona bark. The physiological action of any therapeutic agent is absolutely reflected in the blood, whether such medication is given to reconstruct tissue, to neutralize toxins, or to destroy micro-organisms. The establishment of thermogenesis or thermolysis is absolutely indicated in the blood. Hematology and physiology are closely allied, and to prove the findings of one includes the finding by both. Still our text-books

seem to conflict in statements, especially regarding the physiological action and therapeutic effect of the various antipyretics, etc.

Febrile conditions, neuralgia, etc., are mostly due to digestive disturbances, and in such conditions the blood will reveal a digestive leucocytosis. According to whether the leucocytes are exceedingly active in converting peptones into tissue pabulum, or whether they lay dormant for want of material to work upon, we find thermogenesis or thermolysis. When abnormal temperatures, due to these factors, exist, then the antipyretics, analgesics, etc., are resorted to. It depends now to select the remedy which will exert its physiological action to control the three systems of nerves, viz., thermotoric or heat regulating, thermo-exitory or heat increasing, and thermo-inhibitory or heat decreasing. If the thermo-inhibitory centres are too much stimulated they are apt to lose their control, hence the temperature rises in many patients after the administration of antipyretics. As a rule, most antipyretics and analgesics lessen the oxygen-carrying function of the red corpuscles, also retard the ameboid movement of the leucocytes, and according to this the employment of most of these therapeutical agents would be of harm rather than good in fevers due to auto-intoxication. Physiological experimentation with most of the antipyretics and analgesics now used proved to me that they exert powerful influences upon the histological structure of the blood cells. As most of these products do not add to the amount of oxygen required by the red corpuscles, we should look for the agent which holds in its complex body the necessary combine to increase the oxygen-generating function.

During my experimentation I came across a product known in chemical nomenclature as ammoniated phenyl-acetamide, a product of the amido-benzene series ($C_6H_5NH_2$), and better known as Ammonol. This product differs from all other antipyretics, in as far as it contains in chemical combination ammonia in active form, which gives to it a stimulating instead of a depressing action on the vital functions of the organism. Unlike most other products of the phenyl group, the physiological action of Ammonol is exhibited in the blood. Leucocytosis is decreased; hemoglobin increases, and the red corpuscles appear well formed. Clinical tests with ammonol, as compared with tests of the other products of the phenyl group, corroborate the above findings.

Blood examinations should be resorted to whenever we are confronted with, or are led to believe, that we deal with infectious diseases. Septicemia is easily diagnosed by the finding of some micro-organism in the blood. The Widal test has established its value as a diagnostic medium in typhoid fever. Thus far we have made but little progress to establish a positive diagnosis of syphilis by blood examinations. Our text-books refer to the Lustgarten bacillus, but the author says: "Thus far I have found a bacillus in the diseased areas lying partly between and within the pus cells, and also in the blood." Eve and Lingard have found a bacillus

answering the description of the Lustgarten bacillus in the nucleated cells of the discharge from primary lesions and, in tertiary gummata, while Alvarez and Pavel claim that this identical bacillus is found in normal secretions. At all events all efforts of cultivating said bacillus have proven futile.

Thus, the theory that syphilis is a disease produced by pathogenic bacteria, has as yet no support. Although I have vainly searched for the Lustgarten bacillus, by following the author's preparing and staining method, I have been unable to detect any such bacillus; but I have found the smegma bacillus, whose morphological structure is exactly the same as that of the Lustgarten bacillus, and the author himself states that the smegma bacillus stains with the Lustgarten method. While research work in this direction has been continued for a great length of time, little if any attention had been given to the comparative study between normal blood, blood of syphilis, and blood of other infectious diseases, due to pathogenic bacteria. During the last year I examined the blood of hundreds of cases of syphilis, making the estimation of hemoglobin, count of red and white corpuscles, and pathological differential count. I had the opportunity to study the blood of syphilitic cases which had been under treatment for months or years, also new cases which had never been treated. I found the Justus hemoglobin test to be correct, but of no special value to arrive at an early diagnosis. In every blood specimen I observed one or more crenated red corpuscles with ameboid movement, and if coming in contact with any healthy-appearing, well-formed red corpuscle, such corpuscle at once changed to the crenated form. Likewise I found in the stained specimen a corresponding number of altered but nucleated red corpuscles. The fact that there exists a wide difference between the amount of decrease in hemoglobin and red corpuscles in all syphilitic blood, should be enough proof to change the present misnomer of anemia of syphilis to that of syphilitic chlorosis.

While continuing the studies of syphilitic blood, I was frequently requested by some of the surgeons of the New York Skin and Cancer Hospital to examine the blood of cases of carcinoma. To my surprise I found in such blood the identical histological changes which I had observed in syphilitic blood, and this gave me a new impetus to follow my investigations on original lines. There still exists much doubt as to the etiology of cancer, although some excellent research work is now being done in various laboratories, especially by Dr. Gaylord at the New York State Pathological Laboratory. Some time ago Gaylord expressed his opinion that cancer was caused by a protozoon, but his assertion has not been corroborated. Accidentally I was requested to examine the blood of a young medical student who was desirous to have his blood tested for a matter of curiosity. Results: Hem., 89 per cent.; red cells, 4,700,000; white cells, 5,500. On the day following the young man was vaccinated, a supposed smallpox case having been

located in his boarding-house. and I saw him two hours after vaccination. I again requested him to give me a specimen of his blood, and was surprised to get the following results: Hem., 67 per cent.; red cells, 4,550,000; white cells, 8,700. Microscopically examined, the blood showed the same histological changes which I had previously observed in blood from cases of cancer and syphilis. I have since examined the blood of a number of persons before and after vaccination always to find the same changes. These facts lead me to the opinion that the introduction of virus into the circulation causes the peculiar histological changes in the blood of vaccinated persons, and why should we not consider whether syphilis and cancer are diseases due to virus auto-intoxication.

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THE RECENT CHRISTIAN SCIENCE TRIAL.*

BY JAMES H. RICHARDSON, M.D., M.R.C.S. (Eng.).

THE recent trial of a Christian Scientist in Toronto for manslaughter has taught that peculiar sect that they cannot shield themselves, in violating the law, by pleading their peculiar religious beliefs.

It is also satisfactory that the public were informed that Christian Scientists do not admit there is any reality in sickness, for, no doubt, many will ask, Where in the name of common sense was there any need of a paid "healer," when there was nothing to heal? It is also well that the public was informed by Christian Scientists that they did not believe in the contagiousness of diphtheria, smallpox, etc., nor in the necessity of any precautions to prevent their spread.

One witness "thought a Christian Scientist could not take smallpox." It is not to be expected that counsel would have an intimate acquaintance with all the vagaries of Christian Science, but if he had, I think he might have elicited the fact that Mrs. Eddy herself admits in her miscellaneous writings that "smoothing the pillow of pain may infect you with smallpox."

Mr. Rinkbie testified that "a real man cannot die," but that a "mortal man will die of disease, if it is not checked." The unhappy father of the dead child must have heard this evidence with pain, for the death of his child proved him to be mortal, and "Science and Health" declares that mortals are not God's children, but "the children of the evil one" (p. 47).

Mr. Norden "cited a case of hereditary disease of twenty years' standing cured by Christian Science."

He did not seem to be aware that his new Bible declares: "The Scientist *knows* that there can be no hereditary diseases" (p. 411).

Another witness testified that she lost the use of her hand, was advised rest by Dr. Johnson, and after a rest of fifteen months regained the use of her hand.

What a marvellous cure by Christian Science!

From one witness we learn that there is an institute (?) in this city which, after a few weeks' course and the payment of \$50, turns out practitioners, duly certified as fully equipped to grapple with every form of disease.

There are forty-eight of such institutes on this continent, in spite of Mrs. Eddy's "ordinance" that "teaching Christian Science shall be no question of money" (M. W. 315), and of her denunciation: "The author trembles when she sees a man, for a

* Written specially for THE CANADIAN JOURNAL OF MEDICINE AND SURGERY.

petty consideration of money, teaching his slight knowledge of mind power ("Science and Health").

It was no doubt soon discovered that the ordinance and this pious horror were merely intended to prevent others from poaching on her preserves.

For eight years Mrs. Eddy ran a college, turning out 4,000 practitioners after a few weeks' course, and giving them diplomas, in defiance of the law, which imposed a fine of not less than \$50, nor more than \$500, for each offence.

In my opinion the most important evidence given relates to the subject of prayer for the sick. All the witnesses attributed their cures to the efficacy of prayer to God.

Not one of them, not even the learned counsel for the defence, who combines with his legal practice the practice of a Christian Scientist, seemed to be aware that "Science and Health" expressly denies that prayer and faith have anything whatever to do with Christian Science healing. Had this been brought out in cross-examination, it would, I think, have puzzled them not a little.

Did it never occur to those witnesses to ask, "Why should I send for a 'healer,' and pay money for him to pray to God for me? Will God hear the prayer of a stranger in preference to a prayer which rises from my own anxious heart? Is money needed before God will hear and answer prayer?"

"Yes," the healer unblushingly answers. "When I began the healing work I was so much distressed that the patient received no benefit from the treatment. Then it occurred to me that *we had been told to charge* for our services." That settled it, and the patient was healed at once (*Christian Science Sentinel*).

The teaching and practice of Christian Science is manifestly "no money, no cure."

As to the "demonstrations," upon which Mrs. Eddy relies to prove her miserable religion, they will be found, on examination, to comprise:

1. An immense number of cases, in which it is evident at a glance, there is nothing whatever wrong with the patients, such as trivial accidents, of no account whatever.

2. Injuries of a more severe nature, which are magnified into fractures and dislocations, etc., of which this is an example, recorded in *Christian Science Journal*: A young woman met with an accident, people *said* she had broken her leg. She went about as usual, did not look at her leg, was well in three days; *then* "looked at her leg, and found the broken bones below her knee pressing against the skin, as if trying to get through."

3. Purely hysterical affections, which every physician knows simulate every form of disease.

4. Functional diseases, which are largely under the influence of the mind.

5. Paralytic cases, in which nature has repaired the lesions, and the use of the paralyzed parts has been regained. In some of this class of cases, the patient may remain a long time *apparently* paralyzed, simply on account of a *disbelief* in the possibility of motion, and consequently cannot put forth any *will* to move, until *belief* is restored through *faith* in some extraordinary means. A case which I think is of this nature, of recovery from paralysis of thirteen years' standing, was recorded in the daily papers a few days ago.

6. Cases said to be cancer by Christian Scientist practitioners, who may be competent tinsmiths, dairymen, caretakers, seamstresses, or even barristers-at-law, etc., but are absolutely ignorant of every form of disease, and are actually taught in "Science and Health" that "diagnosis of disease induces disease" (p. 369), and, as the late trial showed, cannot distinguish mumps from diphtheria.

Christian Scientists have, over and over again, been challenged to produce scientific proof of their cancer cures, but have always declined, or failed, to do so.

But, even supposing all these cures to be authentic, they no more prove the truth of Christian Science than Valentine Greatrakes' cures prove the truth of his theory, viz., that all disease resulted from a demon, which was to be driven out by stroking or rubbing.

How is a belief in Eddyism and its marvellous spread to be accounted for? How is it possible for any person of average intelligence to accept propositions in philosophy, medicine, physics, physiology, psychology and theology, which manifest deplorable ignorance of every one of these subjects?

Dr. Bentley, of Cornell University, thinks "it is the sect's comfortable promise of freedom from pain and disease" which attracts. May be, but the wonder remains, why should the promise attract, when daily experience belies the promise?

Dr. Bentley also thinks that "if the practical aspects of the belief were eliminated, and the theoretical part put in plain, unambiguous terms, Eddyism would cease."

May be, but how is this to be accomplished?

The spread of Eddyism is a curious problem, comprising many factors. The chief one is, undoubtedly, the way in which it disposes of the question of evil, which has vexed the minds of men through all the ages. The Lisbon earthquake, or the Galveston horror, do not bother the Christian Scientists. God is All-in-all, *therefore*, there cannot be any evil. (*Q. E. D.*) How simple, how complete this extinction of evil in all its forms, material and moral. Mrs. Eddy has merely to "puff," and away goes evil, "reduced to its native nothingness." "Error" will "howl"

when you are doubled up with colic, or frantic with a jumping toothache; all you have to do is to "deny" it, and away goes error.

Another factor is the fascination which anything mysterious or inexplicable, such as theosophy, Buddhism, spiritualism, etc., exerts over multitudes, even the most gifted.

Another is the loose, uncritical habit, in which so many indulge in reading, especially reading any book requiring a little extra thought. Another is the sense of superiority, the self-inflation engendered by Eddyite teaching. Eddyites are God's children; *they* possess MIND, whilst you and I are mortals, children of the evil one, under the domination of a horrible something they call "mortal mind."

To give an intelligible statement as to Mrs. Eddy's teaching concerning MAN and men, is utterly impossible—and need not be attempted, for Mrs. Eddy's book assures us:

"Brains can give no idea of God's man" (84), a statement which meets with my entire approval. I will, therefore, confine myself to giving an extract from "Science and Health," which may convey some idea of the folly, and at the same time of the vileness, of Eddyism.

"The false evidence of material sense contrasts strikingly with the testimony of Soul."

"Material sense lifts its voice with the arrogance of reality, and says: 'I am unjust, and no man knoweth it. I can cheat, lie, rob, murder, commit adultery, and elude detection by smooth-tongued villainy. Brutal in propensity, deceitful in sentiment, fraudulent in purpose, I propose to make my short span of life one gala day.'"

"Soul, bearing opposite testimony, saith: 'I am spirit. Man, whose senses are spiritual, is my likeness. He reflects the infinite understanding, for I am infinity. The beauty of holiness, the perfection of Being, imperishable glory—all are mine, for I am God—I am that I am.'"

There is no mistaking this language, but if anyone should think it impossible for Mrs. Eddy to mean the *soul of man* to be speaking, read the next sentence: "I hope, dear reader, I am leading you into the understanding of *your divine rights*, and heaven-bestowed harmony." (The italics are Mrs. Eddy's.)

The last factor is the religious teaching. The demands of conscience and stifled sin is reduced to a nullity. "Soul cannot sin," sin is not a transgression of God's law, but merely the *belief of erring* "mortal mind" that sin is a reality. I do not mean to assert that Christian Scientists are wicked than any others, but "to err is human," and a doctrine which asserts that there is no such thing in reality as sin, *must be* destructive. To my mind, nothing can be more horrible than to declare that murder, robbery, lying, debauchery, deception, brutality, etc., etc., cannot and do not "deprive a man of his *divine rights*."

But, after all, something more is needed than the agency of these factors to explain the spread of Eddyism. How are we to account for what may be called the Christian Scientist's peculiar mind, that psychological condition which permits a man to declare that a thing is, and in the same breath to declare it is not. I have already given instances—but to make myself perfectly clear—take this one: A Mr. Fluneau delivered a lecture on Christian Science, in which he lamented that "the world is in a maelstrom of intemperance, and within ten lines below, declared that there cannot be inebriety nor an inebriate.

My matured belief is that the Christian Scientist's mind is in an abnormal condition, that he is incapable of reasoning correctly; that he is in precisely the same mental state as that of one under the influence of hypnotism, who believes that he is drinking wine when he is drinking water, etc., etc.

The hypnotized believe anything, however absurd and contradictory under after suggestion, and so in the very same way do Christian Scientists.

Dean Hart* has stated my views so clearly that I cannot do better than quote from him:

"A perusal of the pages of this remarkable book will reveal to the person of ordinary intelligence that that quality of the mind which is called 'thought' is here so persistently defied, that it at length retires from endeavoring to understand what the authoress means; in the bewilderment which then ensues, the mind surrenders itself to that very condition which is essential for the operation of 'suggestion,' to work upon the disordered body.

"I found that Mrs. Eddy's book was the best mode of inducing the mesmeric sleep I had experienced. The repetition of senseless sentences, with constantly changing signification of words, whose new meanings had to be gleaned from the context, this long string of synonyms: Principle, mind, soul, spirit, life, love, substance, intelligence, all synonyms of God, and their interchange in sentences, *produced a strange maze, which made the mind dazed. . . the reader becomes mentally dizzy, mesmerized in fact*" (p. 86).

P. C. Woolcott, Trinity Church, Highland Park, Ill., writes in the same strain: "To those who read it seems without plan or purpose—only words, words, words, and what is more, words whose meanings are uncertain and shifting. It seems to be altogether lacking in clear, logical thought and expression—a dreary, grotesque sort of a book, and after a few pages the reader lays it down in despair of ever finding out any coherent meaning in it."

"What really happens when you attack these tiresome, monotonous pages is this: You struggle at first to master the difficulties and get at the meaning. If you become convinced that it is not

* D. D., Moderator and Medallist in Experimental and Natural Science, Trinity College, Dublin; Dean of St. John's, Denver.

worth the effort, you dismiss the matter from your mind, and that is the end of it. But, if you force yourself to the task, and pore over the pages, *you soon fall into a condition of mental dizziness or vertigo*. The reasoning faculties are benumbed, your critical judgment is lulled to sleep, and suggestion dominates your intellect."

"The person who has succumbed to what I have called mental vertigo, is incapable of logical reasoning. *The vagaries of the controlling influence are reproduced in the disciple*" (64).*

My experience coincides perfectly with that of these two gentlemen. After a week or so of trying to master Christian Science, I remarked to my intimate friends: "I really believe that if I keep on studying Christian Science, my mind will become 'dotted,' as the Scotch say."

I have already occupied more of your space, Mr. Editor, than I expected, but wish, before concluding, to add a few words about Christian Science healing. Believing, as I do, in this hypnotic influence on the Christian Scientist, it is not surprising to me that good results may follow the course pursued in treatment of disease, *i.e., if the disease is amenable to the influence of suggestion and belief*. I fear sufficient importance has not been given to the influence of *belief* by medical men.

More than fifty years ago, Dr. Holland, in his "Medical Notes and Reflexions," introduced a chapter on the "effects of mental attention on bodily organs," which contained this sentence: "The simple act of concentrating the attention upon any particular organ will effect it in some change, both as regards the sensation derived from it and its functional activity." He also thought that certain of the results of animal magnetism, as hypnotism was then called, might be explained on this principle, "Mind-cure" is not a fad. Belief has worked wonders in healing. * It is belief that has given virtue to all the holy wells, the charms, the holy shrines, the king's touch, etc., the beneficial effects of which it is useless to deny. An intelligent belief in the knowledge and ability of the surgeon or physician, and in the means which science has proved to be efficacious, are wonderful *aids* in relieving all forms of disease.

The lamentable fact is that most people are unable to separate the *post hoc* from the *propter hoc*, and attribute relief obtained through nature, *aided* by belief, to the mummery of a "healer," and publish it as a "demonstration" of the truth of a system which for folly and blasphemy never was equalled.

Christian Science is nothing more or less than unadulterated quackery. Mrs. Eddy has adroitly tacked on a system of mind-cure to a pretended revelation from God, dubbed it "Christian Science," copyrighted it, and proclaimed that it was the "cure-all,"

* There is much in Mr. Woolcott's brochure, "What is Christian Science?" which will interest as also there is in Dean Hart's book. They can be purchased at the Revell Co. Henderson on Lombard Street has some leaflets, costing only a few cents, which will interest.

warranted to free the world from sin, sickness and death, solely in order to gather in the shekels. *The* proof is disclosed in her own words. "Her first pamphlet on Christian Science was copyrighted in 1870, but did not appear in print until 1876, as she had learned that this science must be demonstrated by healing, before a work on the subject could be profitably published."

Mrs. Eddy's pretended revelation is a very old imposture, which can only gull those who are entirely ignorant of the history of quackery.

She has had numerous predecessors who said they were inspired, but none so blasphemous as to declare their productions were the Holy Spirit—among them was Valentine Greatrakes, an Irish gentleman, who, in the middle of the seventeenth century, proclaimed that he was inspired by God to heal all manner of diseases. From all parts of Ireland the deaf and dumb, lame and blind, and diseased of all kinds, crowded his stable, barn and malthouse, to be healed. His fame soon spread to England, and he became the lion in London. Lords and ladies, justices, deans, lord mayors, in fine, the elite of England, vied with each other to do him honor.

His theory was that all diseases were due to the presence of a demon, which he exorcised by stroking and rubbing.

He was followed by Mr. and Mrs. Louthenbury, in 1789, who, also said they were inspired by God, who had endowed them with the miraculous power of healing, by looking upon the sick, and touching them. Their house was besieged by immense crowds, it was said at the time that as many as three thousand persons were waiting, at one time, for the benefit to be derived by being looked at and touched.

They were followed by Johanna Southcott, who, in the latter part of the eighteenth century, published, like Mrs. Eddy, a pretended revelation, and wrote much unintelligible nonsense, and also forestalled Mrs. Eddy in claiming that she was the woman spoken of in the Book of Revelation.

Mrs. Eddy says her *book* was the child called Wonderful, which was foretold by Isaiah. Johanna Southcott predicted that she was about to give birth to a child, even Shiloh, and so infatuated were her followers that they actually prepared a cradle for the infant which cost no less than £200. They were sadly shocked, however, by Johanna's death from *dropsy*, but many persisted in the belief of her speedy resurrection. The sect never entirely died out until a few years ago.

When one reads the rubbish contained in "Science and Health" the lines which Hudibras wrote concerning astrology, are seen to be much more applicable to Christian Science:

"Are not these fine commodities
To be imported from the skies,
And vended here amongst the rabble
For staple goods and warrantable?"

A NEW WRENCH FOR USE IN THE CORRECTION OF STUBBORN DEFORMITIES.

BY GEORGE A. PETERS, M.B., F.R.C.S.(ENG.),

Associate Professor of Surgery and Clinical Surgery, University of Toronto; Surgeon, Toronto General Hospital; Surgeon, Hospital for Sick Children, Toronto.

IN the correction of deformities either in children or adults all surgeons, of course, agree that there is no other power which is so useful as that exerted by the subtle, intelligent, naked human hands. There is in power so applied a precision and nicety of direction and adjustment which cannot be imitated in any mechanical appliance. Moreover, the skin of the hand produces no injury to the skin of the part operated upon; so that in the correction of any deformity in which sufficient strength is supplied by the surgeon's hands, the use of any such apparatus as the one described is not to be countenanced. But there are cases within the experience of every surgeon, such as stubborn deformities in children of eight years or over, and in practically all cases of club-foot in adults, and of the knee joint in both children and adults, in which he feels that the powers of his own hands are totally inadequate. It is in such cases that the use of the apparatus described below is of great value. It is not contended that any such powerful apparatus as this wrench shall do away with the necessity of tenotomy and fasciotomy—in fact any retaining structure that can be divided safely and subcutaneously should be divided just as in the case of correction by hand power; but it is within the experience of every surgeon to find cases in which, after every possible retaining band has been divided subcutaneously, the power exerted by the human hand alone is quite inadequate to overcome the remaining obstruction, and in order to achieve his object he must then have recourse to mechanical aid.

It was with a view to meeting and overcoming these difficulties that the author devised the apparatus about to be described.

The wrench is made of round bar steel about 5-8 of an inch in diameter. The shape is sufficiently indicated by the accompanying sketch (Fig. 1). The reverse extremity of the wrench is expanded into a bow shape, so that in operating, for example, on an adult club-foot, the foot may be passed through this end and the wrench then slid into position. The apparatus is equipped with two movable bars, one (*b*) upon the upright limbs of the wrench, the other (*c*) upon the horizontal limbs. The bar (*b*), as shown in the figure, is bent towards the bow end of the wrench to the extent of about an inch and a half, and is provided with two

thumb-screws which fit into small depressions on the upright limbs, so that it can be set accurately in any desired position. The bar (*c*) is attached by a close-fitting collar to one limb only of the horizontal portion of the wrench, the other end of the bar having merely a concave groove which fits upon the opposite limb. This bar is, of course, also provided with a set-screw. By this means the bar can be opened out completely, so as to allow the wrench to be slid over the foot up to any desired position between *b* and *c*. The bar (*c*) is made slightly concavo-convex on its upper surface, so as to fit the limb, while bar (*b*) is also concavo-convex on its under surface for the same purpose. It will be observed that the bowing of bar (*b*) towards the body of the wrench allows the two bars (*b*) and (*c*) to be practically placed one under the other when in position on the foot, and thus the fullest possible extent of short leverage is permitted. In my first wrench the

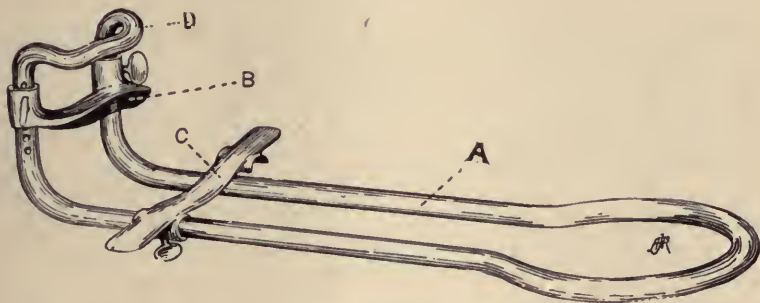


FIG. 1.—*A* the horizontal limbs expanded into a bow. *B* the bar on the vertical limbs provided with set screws. The bar *C* on the horizontal limbs is shown partly lifted. *D* joins the two limbs so as to prevent the collars from "binding."

vertical limbs terminated by free ends above the bar (*b*), as in Fig. 2. It was found, however, in practice that the slight spring between the limbs caused the collars on (*b*) to "bind," and the connection (*d*) bent to correspond to (*b*) was a valuable suggestion by my confrere, Dr. Clarence L. Starr.

In operating with the wrench, the skin over the part may be further protected by placing blocks of "rubber sponge" between the bars (*b*) and (*c*) and the limb. The total length of the wrench is about two feet, and the width between its limbs from centre to centre four inches. This will be found to be large enough for almost any limb, and to be also small enough for children of such an age as to require the use of such a powerful wrench. Of course for any special case a larger or smaller one might be used.

I have used repeatedly the wrench described and figured above in children eight to ten years of age, and also on the knee of an average-sized adult. However, if I were having one made especi-

ally for the knee, I should have the limbs five inches apart from centre to centre. Of course a much lighter wrench would do for young children, but it should in any case be perfectly rigid, so that no spring in the wrench itself should take place, even when the surgeon was using all the effort he deemed wise. In practice this wrench is found to be extremely useful. There is practically no limit to the force that can be applied by its use. The limit, indeed, is fixed by the resisting power of the soft tissues, and with the use of the spongy rubber I have never yet seen any considerable injury done to the skin or muscles.



FIG. 2.—Showing method of using the wrench. Notice that the curve on bar *B* brings it below the external malleolus, and almost opposite bar *C* on the horizontal limbs, thus increasing the leverage.

The apparatus, being made entirely of metal, can be perfectly sterilized either by heat or by immersion in antiseptic solutions.

I have not used the instrument in cases of bow-legs or knock-knees, requiring fracture, and so cannot speak in regard to its suitability for such cases. I have, however, not the slightest doubt that sufficient power could be exercised through its use to fracture a bone in a young person, and I think without any undue injury to the soft parts. However, the open operation in these cases is usually so satisfactory, and accompanied by such slight danger, that any mechanism for producing subcutaneous fracture seems almost to be uncalled for.

102 College Street, Toronto.

NEW YORK CLINICS.

BY JOHN HUNTER, M.B., TORONTO.

TWELVE years have come, played their part in life's drama, and gone, since, as one of the German professors would say, I saw New York "before again." In the "strenuous life" of the practice of our art, the passing years make deep furrows on the brows of its devotees. Men who in 1889, with unbounded zeal and untiring energy, were working up and up to higher niches in Fame's dazzling temple, are to-day, with their ranks decimated and their wan faces turned toward the setting sun, complacently marching with feebler tread slowly onward to that "bourne whence no traveller e'er returns." But though "change and decay" may be seen in the case of individuals, yet our science is most richly endowed with virility. The medical drama has no interlude; whilst the old actors are receding, new ones, with more scientific trappings, and (perhaps) with more—certainly not with less—assurance of their ability, are passing forward to take their part in what may be represented as a great conflict between disease and health. This by the way; now for the practical part.

NOSE AND THROAT WORK.

Taking a good deal of interest in this part of the work, I first directed my steps to where it could be found. I was very much nonplussed on calling on Prof. Bosworth, one of the foremost nestors of American rhinology and laryngology. He gave me a very courteous reception. Whilst plying him with questions regarding the best course to pursue, I was furtively taking in his office outfit. After looking in vain for anything besides an atomizer and an electric jet, I summed up courage enough to ask him what appliances were really needed for examining nose and throat cases. He laughed and said when he was young he had a much larger collection, but now—taking out a reflector and a laryngeal mirror from his vest pocket—I find these with even a tallow "dip" are quite efficient. Prof. Lefferts, in his lecture at Vanderbilt Clinic, after describing what he termed the three essentials for this kind of work, viz., a good lamp, a reflector, and a laryngeal mirror, showed his class a most elaborate display of electrical appliances for illuminating the mouth, throat, accessory cavities, etc. He said: "These are very ingenious and beautiful, costly to purchase, expensive to keep in repair, and practically needless." He courteously, but I think most justly, scored the general practitioner. He said a man has scarcely the right to claim to be

a general practitioner who does not acquire sufficient skill to use the laryngoscope intelligently. He went on to say that it was the duty of every physician to examine the nose and throat in all pulmonary cases, and that it required less time and skill to make an accurate examination of the upper respiratory tract than of the chest.

A quarter of a century ago Bosworth came to the conclusion that there is no such a structure as a normal tonsil between the pillars of the fauces. The old "Nestor" holds the same opinion to-day, though almost innumerable opportunities have come before him of verifying or disproving his views. Prof. Myles, in his clinic, at the New York Polyclinic, rather felt inclined to accept Bosworth's conclusion. One is somewhat surprised at the apparently reckless profusion with which cocaine is used by Myles in his nose and throat operations. He very freely applies either the powder on a moist swab, or a one hundred per cent. solution. In addition, if the operation is to be any way severe, he often gives a hypodermic of morphia and atropia. Myles used the Gottstein curette, afterwards scraping the debris away with his finger-nails in removing post-nasal adenoids. Prof. Quinlan and his assistant remove all the adenoid tissue they can reach in the vault of the pharynx with forceps, placed at a right angle to the handle, and with broadish blades with oval openings. They then wrap the index finger, using first the one and then the other, with some rather coarse sterilized towelling, and thoroughly clean out the vault with the finger, thus protected. The latter process seems the much safer and more effective method. A rather ingenious little drill was used to remove spurs or hard growths from the upper region of the nasal septum, when there was danger of injuring the cribriform plate. The drill resembled a trocar, with a blunt end. There is a window near the end of the canula, into which, when *in situ*, the growth projects. A rapidly-revolving spur, which comes up inside the canula, removes whatever of the growth is protruding into the window. The little instrument does its work quickly and harmlessly. In removing the faucial tonsils, the McKenzie tonsillotome, with the flat blade that pushes forward, is mostly used. The adhesions between the tonsils and the pillars are broken up by a bent probe. The tonsillotome is then pressed firmly against the pillars, the index finger inserted to feel that the tonsil is fully engaged, then slightly withdrawn and kept firmly pressed against the flat portion of the blade as it is thrust forward. If the tonsillar tissue is much degenerated, Myles picks out the rest of the stump with curved forceps, leaving as clear a cavity as possible. Considerable stress was laid upon the importance of having the respiratory space as nearly as possible of the same capacity in both nostrils. Unequal atmospheric pressure on either side of the septum would intensify

the pathological conditions in the obstructed side, hence the necessity for removal of enlarged turbinates, the size of which cannot otherwise be reduced.

At the Nose and Throat Hospital I had the intense pleasure of running across Fitzgerald, a Toronto boy, class, I think, of '97. He is on the staff and doing his full share of scientific work. In this hospital they have a powerful electric light apparatus, for using the rays of light in treating lung and throat cases of tubercular origin. The chest and neck are uncovered, and the patient sits either directly before the lens, or with a screen intervening. They claim good results, but I have not yet had time to investigate the method. Fitzgerald let some light upon a mystery that often puzzles the general practitioner, viz., how our specialists get rich so easily, whilst they who have to work so much harder don't get that way at all. He said they can get from twenty-five to fifty or a hundred dollars for removing tonsils, and sometimes as much as five hundred for an operation on adenoids.

Well, no one need be so ungenerous as to begrudge these specialists an *occasional* good fee, for in no other calling do men bestow, with more princely generosity, their time and skill in deeds of charity. The poor in New York have free access to all the skill the multi-millionaires can command.

In subsequent papers will deal more fully with the medical and surgical phases of clinical work in the New York hospitals.

DR. L. H. WARNER, of New York, who during the past few years has made many warm friends in Canada by the scientific value of papers read by him at the Canadian Medical Association meetings at Ottawa, Winnipeg, and elsewhere, has taken up bacteriological work as a specialty. The Doctor has opened a laboratory in the Astor Court Building, 20 West 34th Street, New York City, and is prepared to make chemical, pathological, and bacteriological analyses and examinations.

WE are very pleased to notice that Messrs. Parke, Davis & Company have opened an office in Toronto at 50 Bay Street, which will be in charge of their local representative, Mr. W. M. Grant. They have taken this step, not because they intend carrying any stock of their products in Toronto, as such is not the case, but in order to have an address where physicians and the drug trade can reach them. Any request for samples or of literature in regard to any P. D. & Co. preparations, or for any information of any nature in regard to them, will be given careful attention. Their telephone number is Main 2014, where Mr. W. W. Barlow, the genial detail representative who talks P. D. & Co. to the physicians of Toronto, may also be reached.

Public Health and Hygiene.

... IN CHARGE OF ...

J. J. CASSIDY, M.D., AND E. H. ADAMS, M.D.

REPORT ON TUBERCULOSIS BY THE COMMITTEE ON CONTAGIOUS DISEASES OF THE PROVINCIAL BOARD OF HEALTH OF ONTARIO.

MR. CHAIRMAN AND GENTLEMEN,—Your Committee, in view of the renewed interest taken in the causes of the prevalence of tuberculosis in man and animals, and in the enormous mortality due to it, more than 100,000 deaths having been due to it in the United States in the census year 1900, believes it to be the duty of this Board to indicate, as briefly as possible, its views as to the most practical direction in which the public, physicians, and public health authorities in Ontario can take action towards lessening the prevalence of a disease the cause of so great suffering, mortality, and family and economic loss to the community.

In the address by Prof. Koch, that eminent bacteriologist, who will ever remain illustrious as the discoverer of the bacillus or germ of the disease, refers in the first paragraph to *Tuberculosis as a Preventable Disease*; and points out that this fact became evident because its cause had been discovered. Referring to the fight for its prevention, Dr. Koch says: "Such a conflict requires the co-operation of many, if possible of all, medical men shoulder to shoulder with the State and the whole population."

In the paragraph on "Special Preventive Measures needed for Various Diseases" he points out how these may vary for different diseases, and citing plague, cholera, hydrophobia, leprosy and tuberculosis, and states what this Board has expressed and referred to in its circular issued in 1890, that "sputum is the main source of infection," and that the lungs are the chief source of this disease. In the next paragraph he refers to the "differences between human and bovine tuberculosis."

This difference was noted by Prof. Cruickshank in 1889, and more recently by other writers, notably Prof. Theobald Smith, of the Bureau of Animal Industry at Washington. Prof. Koch's conclusions have gone further, however, than some others in seeming to assert that the difference is not only in morphology or appearance, but that the two diseases are different in essence, and

that the bovine disease is not communicable to man. This view so subversive of what for over ten years has been a general belief, has not been accepted by many, who are, however, ready to admit with him that the infection of the human from the bovine is not as frequent as from the prevalence of bovine disease and the common use of the milk and meat from cattle might be expected.

Some of the reasons why so many refuse to accept his conclusions are:

1. That the human germ, accustomed to a temperature in man of 98.04, has its optimum or best growing temperature at this point, while the normal temperature of the cow being 101 degrees, the bovine germ finds its optimum at the latter point; and that in keeping with the well-known fact of the great variability of these simple forms of vegetable life under different environments and the multitude of generations of any germ within a short period, it is reasonable to suppose that the bovine germ taken into the human body with milk may live for days and weeks on the mucous surface, undergoing variation in successive generations, and may, as other germs do, even the human germ itself, find an entrance into the tissues whenever, through a congestion or abrasion of the mucous surface, an opportunity arises.

2. That this assumption is probable is seen in the fact that ninety per cent. of *post-mortem* examinations of people dying of other diseases show that they have been attacked at points of the mucous membranes, by tubercular germs which have not succeeded in causing any general disease of the system.

3. That in consumptives who constantly swallow their own sputum, only a few relatively have tuberculosis of the intestine; and the same fact is illustrated by Prof. Koch's experiments, that hogs fed with bovine tuberculosis become infected in the neck, glands, etc., but not necessarily in the intestines.

4. That, as argued by Lord Lister, very few tuberculized persons, even children, who of necessity must swallow with food in infected rooms, and in the mucus from the mouth and nose, the germs of the human disease, are attacked in the mucous membrane of the stomach and intestines.

5. That some diseases, as for instance anthrax, the most sudden and fatal of all diseases, do not attack human beings with the same readiness or nearly the same fatality as they attack cattle; while small-pox, a disease so readily communicable and so fatal in man, is not taken at all directly by cattle, but yet has been shown by various experimenters to be through a series of transmissions from calf to calf, at length capable of producing mild small-pox or cow-pox in cattle.

6. That the bacillus tuberculosis, like all other micro-organisms, varies greatly in the virulence of the germ from different patients in animal inoculations, and in the degeneration of the germ in

laboratory cultures. This fact is supported most strongly by Profs. F. Hueppe and Weleminsky of Berlin, who both combat strongly Koch's position, since, though differing still more from bovine tuberculosis, they have succeeded, by making successive cultures, in grafting avian or bird tuberculosis on animals.

7. It is a recognized law that the antitoxin or serum produced in the blood of animals by the presence of the germs of one disease is a specific only against germs of that disease; but it is found that the antitoxin (Tuberculin) produced by the bacillus tuberculosis (even from a mild germ propagated in the laboratory for years through successive cultures) is equally delicate in diagnosing the presence of tuberculous nodules in man and in cattle.

8. Experiments made in Berlin under the direction of the Commission of 1901, on smaller animals, have not established any difference between human and bovine tuberculosis.

9. Prof. Virchow, the great German pathologist, refers to occasional cases of peritoneal tuberculosis of such enormous extent as to lead to the suspicion that they may have been due to bovine germs, though holding that the transmission of bovine tuberculosis to man is probably not very common.

10. Many seemingly authenticated cases of infection of veterinarians and others through wounds of the hands, and by use of known tuberculous milk.

Prof. Koch dealt with the subject of bovine tuberculosis, quite fully, in his most practical paper; but he desired to press home that it is the human sputum which is the great source of human infection, and pointed out how, though the well-to-do classes who live in large houses and enjoy careful nursing, may be protected against the danger of infection, yet it is quite different among the poor, who may live in "two small ill-ventilated rooms."

He asks, "How can the necessary cleanliness be secured under such circumstances? How is such a helpless patient to remove his sputum so that it may do no harm? Thus families are infected and die out, and as he says, the people say the disease is hereditary. So it is the over-crowded dwellings of the poor that we have to regard as the real breeding-places of tuberculosis, and he says it is gratifying to see how, in all countries, efforts are being made to improve the dwellings of the poor.

The statistics of tabulated deaths for Toronto in 1898 too sadly confirm this statement, as do those from all sources.

The statistics of Toronto show that eight per cent. of the deaths from consumption in this city are among the class of artisans.

The advice given in the circular issued in June, 1900, by your Board very fully recognized this fact, when it refers:

1. To the need of supplying isolated wards for consumptives in public institutions.

2. That in private families there should be as much isolation as possible, and special care taken to destroy expectorations.

3. That vacated rooms should be thoroughly disinfected.

4. That local Boards should make rules for the notification of cases of consumption, while at the same time it points out this is not in order that houses should be placarded, but that Boards may assist householders, especially the poor, by supplying printed rules and directions for limiting the dangers of infection.

5. To the need for municipalities establishing sanatoria for giving aid to persons, especially the poor, affected with tuberculosis.

Prof. Koch's arguments in his address all lead up to this latter point, which is referred to in the paragraph on "The Need for Hospitals for Consumptives." He says: "I know very well that this project will have great difficulties to contend with, owing to the considerable expense it entails," and points out that "its execution opens a wide field of activity to the State, to municipalities, and to private benevolence."

As, however, this cannot be done at once, Prof. Koch argues that notification be made the law, in order that such aid already referred to may be given to householders.

His concluding section deals with the special subject of Sanatoria, or Cure-Homes for Consumptives, since, as he points out, the disease is curable in its early stages.

Quoting from the report of the German Central Committee for the establishment of Sanatoria for the cure of Consumption, he states that 5,500 beds will be at the disposal of those institutions at the end of 1901, making it possible to treat 20,000 patients every year. And then referring to statistics of cure, points out that 4,000 persons would leave these cured, and the remainder having their lives greatly prolonged, with profit to their family and the State.

Your Committee is constrained to ask: "How in this Province, where on every hand trade, commerce and agriculture are prosperous, and where our population has increased slowly, can we afford to neglect so potent a means of saving life and increasing population; and furthermore, preventing the loss of time, labor and expenditure, incidental to the sickness and death caused by the annual recurring of 3,000 deaths from this disease.

Your Committee would herewith present with this report the resolutions adopted unanimously at the recent meeting in Buffalo, of the American Public Health Association, representing the advanced scientific opinion on this subject, of the sanitarians of the United States, Canada and Mexico, and would desire to draw particular attention to the practical recommendations contained therein.

Resolved,—That notwithstanding the advances of sanitary sci-

ence, the mortality from tuberculosis continues to be appalling. It has been demonstrated that by the application of proper measures this mortality may be diminished rapidly and to a great degree. Therefore, every effort should be made by sanitarians to carry into effect all reasonable methods which have been shown by experience and research to be efficacious towards this end;

Resolved, That the increase of tuberculosis in cattle and swine as shown by investigations of recent years, and by meat inspection statistics, is a serious matter from a commercial as well as sanitary point of view, and calls for more systematic attention from those responsible for the integrity of the food supply and for the protection of the public health ;

Resolved, That this Association is of the opinion that sufficient facts have not been offered by Prof. Koch or other investigators to prove that human and bovine tuberculosis are different diseases; it is further of opinion that the variability under different environment common to micro-organisms may, on further investigation, be found sufficient to account for the differences that have been noted, and that the germs of these diseases may yet be proved to be closely allied or identical. Irrespective of the communicability of bovine tuberculosis to man, the inspection of animals and premises is absolutely necessary in order—

1. That the meat and milk of animals suffering from this and other constitutional diseases be not used as human food.

2. That the sanitary condition of dairies, stables, etc., as regards cleanliness, water supply and ventilation, may be maintained.

3. That the health of dairymen and other handlers be closely supervised to prevent the spread of diphtheria, scarlet fever, human tuberculosis, etc., through the milk supply.

Resolved, That this Association, while desiring to express its positive opinion as to the importance of dealing with animals and their products, as indicated in the preceding resolutions, does at the same time insist upon the necessity for dealing with the still greater dangers now universally recognized of the transmission of tuberculosis from one person to another by continued personal association, through inhalation of the air of infected living rooms, the contamination of clothing, handkerchiefs, and similar objects with sputum and other secretions, and would therefore urgently recommend that municipalities adopt regulations as follows:

1. Against expectoration on pavements and in other public places.

2. For the compulsory notification by physicians of cases of tuberculosis, in order that literature may be supplied to householders and municipal aid given where necessary to lessen the dangers to the family of infected persons.

3. For the establishment of municipal sanatoria for the benefit of persons and families of limited means.

4. For the regular inspection of tenements, factories, workshops, schools and other public institutions to promote cleanliness, ventilation, and other sanitary conditions.

The proper course for the executive health bodies to adopt seems to your Committee to be this: That whilst ready to listen to all that Prof. Koch and others have to say, and whilst waiting for the further developments which we may expect from the investigation of the Commissions that have been appointed and other scientific bodies, we should not relax any of the vigilance that has been recommended in regard to tuberculous meat and milk, and this Board unites with Dr. Koch and others in continuance of efforts to prevent the spread of tuberculosis from tuberculous patients by dealing properly with sputa and providing for the proper care and comfort of those suffering from consumption, and other forms of tuberculosis, especially among the poor.

In concluding its report, your Committee would quote the concluding words of Prof. Koch.

"If we allow ourselves to be continually guided in this enterprise by the spirit of genuine preventive medical science, if we utilize the experience gained in conflict with other pestilences, and aim, with clear recognition of purpose and resolute avoidance of wrong roads, at striking the evil at its root, then the battle against tuberculosis, which has been so energetically begun, cannot fail to have a victorious issue."

J. J. CASSIDY,
P. H. BRYCE,
W. OLDRIGHT,

Committee on Contagious Diseases.

Isham Springs.—Mr. Merritt A. Brown, of 14 Yonge Street Arcade, Toronto, is General Canadian Agent for Isham Waters, and will be willing at all times to answer enquiries from physicians. See advertisement on page xlix. this issue.

Excerpt.—Dr. L. Fürst, of Berlin, a short time ago wrote and published in the *Wiener Medicinische Presse*, Vienna, Austria, a most interesting article on "Mental Depression and Chronic Constipation." He expressed himself as follows: "Patients suffering from chronic hyperemia, or overexertion of the brain, caused either by prolonged mental overwork, or by depression of the mind of long standing, from business cares, worry or grief, etc., are usually, and as a result thereof, afflicted with slow or inactive bowels. Such constipation I have invariably and successfully relieved by the application of the Hunyadi Janos bitter-water, and thereby cured such patients of the accompanying brain or nervous disorders."

Selected Articles.

STYPTICIN.

THIS new, uterine hemostatic,, styptic, and sedative, and dental and nasal styptic, exists as a bitter, yellow powder, soluble in water or alcohol. It is used in every form of uterine hemorrhage, not due to fungus endometritis, retained fragments of placenta, or neoplasms. Its chief virtue is as a hemostatic in the painful, prolonged or excessive menstruation of young women, and in the menorrhoea or menorrhagia of the young it is best given in doses of value in pulmonary hemoptysis and its topical application, as powder, or on cotton or gauze, in dental and nasal hemorrhages, has been spoken of very highly. As a prophylactic against dysmenorrhoea or menorrhagia of the young it is best given in doses of 3-4 grn. four or five times a day, in tablets or elixir. In other conditions the dose varies from 3-4 to 4 grn. four or five times a day, by the mouth or hypodermically, according to urgency of case, in sugar-coated or hypodermic tablets.

In 1893 Dr. Martin Freund, then professor of organic chemistry and pharmacology in the University of Berlin, suggested the advisability of trying cotarnine hydrochlorate as a hemostatic and styptic. His reasons for this he thus states: "The costliness of hydrastinine hydrochlorate, which was introduced into therapeutic use on my suggestion, made desirable the introduction of a drug of similar effect but less expense. The close chemical relationship of cotarnine to hydrastinine readily suggested the former as a possible succedaneum for the latter." After adequate physiological and clinical evidence of its real value had been obtained, it was introduced to the profession under the brief name of stypticin.

Internally in Uterine Hemorrhage.—Dr. H. J. Boldt, while professor of gynecology in the New York Post-Graduate Medical School, tried stypticin in eighty-seven cases of uterine hemorrhage, and reported his results at the ninety-third annual meeting of the New York State Medical Society, at Albany. Among other interesting things he said:

"In reviewing the action of Stypticin one must come to the conclusion that in certain forms of uterine hemorrhage it is almost a specific. I have found no unpleasant symptoms even in cases in which 4 1-2 grn. (0.3 Gm.) doses were administered. . . .

"I close this recital of my personal observations by requesting

those who have tried other remedies and found them wanting, to add also stypticin to their therapeutic agents; feeling convinced that in it they will find a most useful addition, and that the curette and local treatment will be less frequently called for. . . .

"For some time more attention has been devoted to operative interference for the control of bleeding from the uterus, or to some form of local treatment—the latter not infrequently with deleterious results to the patient. This was undoubtedly due to the unsatisfactory results which had been obtained from the internal remedies used in such cases. These remedies were few in number. With the introduction of stypticin, however, we have a very valuable new remedy—a hemostatic 'par excellence' if the proper indication has been selected for the employment of the drug. In the above I have endeavored to show in which classes of cases such results may be expected."

Dr. J. B. McGee, professor of materia medica and therapeutics, Cleveland College of Physicians and Surgeons, states:

"A limited use of stypticin has convinced me that its claims as an efficient uterine hemostatic are just. I have occasionally found it to succeed when the usual agents of this class have failed to control the existing conditions, and my personal experience with it has been quite satisfactory. Its action is usually prompt, and is said to be due not to uterine contraction, but rather to a vaso-motor influence. I have never noticed the narcotic or sedative action ascribed to it by some, and while larger doses are recommended, 1-2 grain orally every few hours will generally exert a beneficial action, and it is evidently worthy of being recognized as among the reliable remedies of its class."

Dr. Sigmund Gottschalk, Chief Physician of Women's Clinic, Berlin:

"Our results from stypticin in hemorrhages of varied origin have on the whole been highly satisfactory. It is adapted for long-continued use. Over other hemostatics, as ergot and hydrastis, it has the great advantage of sedative action, visible in anodyne and soporific effects that are very desirable, particularly in *dysmenorrhœic conditions*. The hemostatic results secured in cases of pure subinvolution were in every case permanent. Permanence of effect was the rule also in the menorrhagias without demonstrable lesion, so far as our clinical material enabled us to demonstrate this."

Internally in Pulmonary Hemorrhage.—Dr. Martin Freund, after reviewing the successful results with stypticin in gynecological cases, says:

"The efficacy of stypticin in various forms of *uterine hemorrhage* is established. Whether this agent, in certain instances of *pulmonary hemorrhage*, is indeed superior to others, has still to be determined by corroborative tests, which I would herewith sug-

gest." [Here the author obviously refers principally to the report of Laviaille and Ruyssen, cited below.] "Having been further personally informed of excellent results attained with it in a case of *rectal* hemorrhage, I would propose that suitable trial should be given it in such cases, as well as in those also of *vesical* and *nasal bleedings*."

He then briefly quotes the results obtained by the two French observers above-named as follows:

"Drs. J. Laviaille and Ch. Ruyssen, in Lille (France), (on suggestion of Prof. De Combemale, of the Medical Faculty of Lille University) investigated the action of stypticin in *hemoptysis*, especially with tuberculous subjects (*L'Echo med. du Nord*, 1898, p. 225). Whenever the tuberculous condition had not passed beyond the second stage, very happy results were had. Injections of up to 1 Cc. (16 min.) of 10-per-cent. stypticin solution were made three to four times, all on one day. Even the most copious hemorrhages ceased after four injections; also by mouth, eight or more of the 5-Cg. (3.4 grn.) tablets, in the same period, yielded satisfying action. When congestive conditions prevailed, the administration of the remedy was combined with laxative and derivative treatment."

Internally in Menstrual Neuroses.—In a paper on "Functional Neuroses and their Relation to the Diseases Peculiar to Women," read before the New York Academy of Medicine, Nov. 25, 1898, Dr H. J. Boldt said:

"Among particular forms of reflex neuroses, those in connection with menstruation are quite prominent, as, for example, *acne rosacea*, *eczema*, *urticaria*, etc. The following instance is unusual:

"A girl, aged fourteen years, began to menstruate between the eleventh and twelfth year; the flow was profuse, and of eight days' duration. A few months after the appearance of the menstrual epoch, the child developed an *eczema*, which extended over the hips, buttocks, and posterior surface of the thighs, gradually diminishing to nearly complete disappearance for two weeks after cessation of the flow. Upon the recurrence of each menstrual flow, the skin affection was intensified and took a similar course as on previous occasions. The writer was finally consulted on account of the exceedingly profuse flow. The child was well developed, short in height, and very plump. She complained of great weakness and was very anemic, the quantity of hemoglobin being reduced to 45 per cent. A recto-abdominal examination revealed no pathological condition to account for profuse bleeding. Incidentally my attention had also been called to the *eczema*. The girl was placed upon the use of stypticin in doses of 1-4 grn. every three hours, beginning four days prior to the next period; and with the beginning of the flow the dose was increased to 1-2 grain every two hours. The result was that the next period continued

only five days, the loss of blood was greatly diminished, and the eczema not intensified at this period. The treatment was continued three months; the flow diminished to three days' duration, and of moderate quantity; the anemia disappeared and the eczema vanished without any direct treatment."

Topically in Dental Hemorrhage.—Dr. J. Munk, of Duna-Szerdahely, Hungary:

"Tooth extraction is not infrequently followed by hemorrhage difficult to suppress. Such hemorrhage sometimes recurs in a violent degree as long as twenty-four hours after the operation. There have been instances in my experience in which all the well-known styptics remained without avail, and where only mechanical compression, continued for hours together, succeeded in preserving the patient from bleeding to death. In several such cases, even chromic acid (recommended by Hollander as generally reliable) failed in my hands.

"In a desperate case of this kind, recently, I conceived the notion of *externally* applying one of the stypticin tablets, which I always carry in my emergency outfit for purposes of gynecological hemostasis. I cleared the gum cavity of the clots, absorbed the flowing blood with a cotton tampon, and immediately upon withdrawal of the latter inserted the tablet into the cavity, pressing it down by a new tampon—and lo! the bleeding ceased as if by a stroke of magic.

"I subsequently tried the same procedure in four more cases, and each time I witnessed the same prompt effect.

" . . . On the ground of my experiences with this remedy, I should venture to suggest its being tried also in bleeding after *circumcision*."

Topically in Epistaxis.—Dr. Munk states:

"On the ground of my experience with the topical styptic action of stypticin (substance) in dental hemorrhage, I tried 10-per-cent. solutions thereof in nasal hemorrhage. The result here was likewise a striking success."

Dr. Marcus:

"I happened to have occasion to treat two rather severe cases of epistaxis in which I applied stypticin with satisfactory results."

In Obstetrics and Gynecology.—Dr. Gottschalk's first report, with tabulated details of forty-seven cases treated wholly with stypticin—made after nearly two years' systematic observation and comparison as to the action of the various hemostatic agents—contains the following conclusions:

"Pure subinvolution of the uterus after childbirth—Uniformly prompt effect; not any failure. (By pure subinvolution I mean such as is caused merely by muscular atony, not by the presence of debris of placenta. If the latter are present, ergot preparations and hot douches are indicated.)

"Fungous endometritis, or, bleeding from the ovaries—Symptomatic benefit as to hemorrhage and pain; but curettage or cautery not generally superseded thereby. When, however, the latter measures prove insufficient to still the flow, the *subsequent* use of stypticin is mostly effectual.

"Myomata—Lessening of flow in every instance.

"Climacteric hemorrhage—The same.

"Purely congestive menorrhagia (without anatomical change—Equal efficacy as from hydrastis preparations.

"Intrauterine polypi (even very small endometric neoplasms)—Insufficient effect; the removal of the growths by other means is needed."

In recapitulating the results of his six years' experience in the use of stypticin, Dr. Gottschalk states:

"The inability of stypticin to effect uterine contractions by which a foreign body could be ejected from the uterus, makes it less effective than ergot in such uterine hemorrhages after abortion, as have their origin in retained fragments of the placenta, or in those which are due to small mucous polypi. Submucous myomatous polypi must, when present, be removed before the remedy can exert any beneficial action.

"Stypticin *has been found effective* in the following category of cases:

"1. In *purely* climacteric hemorrhages.—Special stress is laid on the term "*purely*" climacteric, because malignant processes are covered up by many so-called "*climacteric*" hemorrhages. Every so-called climacteric hemorrhage following a very protracted period of amenorrhea (say 9 to 12 months), and then becoming suddenly aggravated after coition or without discoverable cause, should be suspected as being malignant and promptly investigated as to its possibly requiring surgical interference, without losing time by waiting for effects from internal medication.

"2. In hemorrhages following defective uterine contraction after delivery or *abortion*, when not due to decidual or placental debris.—There is a form of such subinvolution, characterized by abnormally increased blood-pressure, which causes continued or recurrent hemorrhage. This is usually relieved at once by the subcutaneous injection of 0.2 Gm. (3 grn.) of stypticin; sometimes, however, only after repeated injections. (If the atonic hemorrhage is due to insufficient closure of the placental veins after expulsion of the placenta, then large doses of ergot, with hot vaginal irrigations, are preferable.) Again, stypticin is the proper remedy in subinvolution referable to inflammatory para- or peri-metric exudations, because then the hemorrhages are again due to increased blood-pressure in the intramucous vessels of the uterine region.

"3. In reflex (secondary) hemorrhages; *i.e.*, those causes by

diseases of adnexa of the parametrium, without the uterus itself being diseased.

"4. In congestive hemorrhages of young girls not referable to a pathologico-anatomic condition.—Here the remedy is of particular benefit when used for a few days *before* the menstrual periods, and in such cases a permanent good result is frequently obtained.

"5. In myomata.—Here the remedy deserves more extended application, within the limits noted.

"6. In hemorrhages during pregnancy.—Here I have so far employed stypticin only so long as no uterine contractions had as yet occurred. (When they had, I usually prescribed repose in bed, opium suppositories, and viburnum internally.) Other observers, however, report having prevented threatened abortion by the administration of stypticin alone. (I should think it might be eligible, in urgent cases, to combine the application of the opium with the stypticin treatment.)"

Administration.—In most of the indications discussed under "Obstetrics and Gynecology," the majority of the observers agree pretty closely as to the *measure or degree* of success gained. Where some of the authors here quoted differ on this particular considerably, these differences may readily be attributable not only to variations in the clinical material and the circumstances; but obviously also, in quite a conspicuous sense, to the very *different doses* employed by pioneer investigators.

That a new drug had to be employed cautiously at first, until the safe limits for its dosage had become established, is explanation enough for imperfect results to have appeared in early experience. When, later on, a wide and prolonged practice had extended the limits of dosage, it was but natural that more decided and more uniform successes were obtained.

It may be taken as a good augury for the *permanence* of a new remedy when during seven years' trial the reports on its availability are found constantly to increase in fulness and to become more and more positive as regards its virtues, as is the case with stypticin.

Even as early as 1895—not quite two years after the first trial of stypticin as a gynecologic hemostatic—Dr. Gottschalk, the first experimenter with this drug, and the one who, *four years after* the date of his first paper on stypticin, published a *review paper* thereon, covering six years' experience altogether, found occasion to make the following public statement:

"Owing to the number of new remedies with which the markets are flooded, I approached the clinical probation of stypticin with great skepticism. This attitude appeared to me, after my first ten cases thus treated, to be well justified; for my results were not at all promising. As I soon found, however, this experience was not due to the remedy, but to the *insufficient doses* in which it

had been given—which were but Gm. 0.025 (3-8 grn.) three times a day.

“The effects were totally different, when I *doubled*, not only the single, but also the daily dose; and grew still more striking when I no longer hesitated, in profuse uterine bleeding, to inject Gm. 0.2 (3 grn.) at one sitting per day, subcutaneously, into the gluteal muscles.

“The injections were given in 10-per-cent. aqueous solution, sterilized, and kept in a hermetically sealed tube until required; and care was taken to carry the needle deeply into the muscular structure. The internal doses employed were mostly of Gm. 0.05 (3-4 grn.) five to six times per day, in powders, or in gelatin pearls.”

[The latter are now replaced by sugar-coated *tablets*.]

Of importance also seems to be the following hint, by the same author:

“My experience has shown me that it is advisable, in *menstruating* patients, to give the remedy *prophylactically* also. The effect in menorrhagias is vastly superior, when the administration of stypticin is begun four or five days *ahead of the impending period*. Smaller doses are available here for—say 3-8 grn.—about four times per day; as soon as the period begins order *twice that amount* to be taken during its continuance. If a patient be not seen until the bleeding is at its height, the prompt *subcutaneous* intramuscular gluteal injection of 3 grn. (as before explained) is advisable; this may be repeated for several days without harm.”

It is significant that, four years later, the same author *once more doubled* the internal dosage he used, as will be seen from the following:

“The usual effective single dose is Gm. 0.1 (1 1-2 grn.), four or five times per day at appropriate intervals.”

To this he adds:

“A patient who took by mistake the *daily* dose of Gm. 0.4 (6 grn.) *at once*, soon fell into a slumber lasting half an hour, from which she awoke, refreshed, without feeling cause for any complaint whatever.”

As to the relative merits of internal *versus* subcutaneous administration, Dr. Gottschalk makes these remarks:

“I have gained the general impression as if the subcutaneous administration were superior, as to promptness of effect, to the internal; although the latter is undoubtedly more convenient. In all the great number of injections made under my observation, the most that ever was reported, in the way of *subjective* symptoms, was, in some few isolated cases, a burning sensation and dullness immediately about the puncture, lasting some hours. But I never witnessed, in any case, any external sign of irritation; there

was absolutely never any infiltration. I wish to call attention once more, however, to my having used only absolutely *sterile* solutions, and injected *deeply* into the gluteal muscles."

In his review, after four years' *additional* experience, Dr. Gottschalk says:

"The impression that subcutaneous administration of 2 Gm. (30 min.) of a 10-per-cent. aqueous solution—best applied *bilaterally*, away down into the glutei—surpasses in efficacy the internal dosing, has remained with me as it was before."

ALKALOIDAL MEDICATION.*

BY ALEX. C. EWING, M.D.

A GOVERNMENT that will provide for the welfare of its people must see that its armament is up-to-date, that the crude 32-pounder of thirty years ago is replaced by the rapid-fire breech-loader of to-day. The shotgun has been relegated to the past in army warfare, and we now have the repeating rifle and the gatling.

Likewise, if we as progressive physicians are to keep up a successful warfare against the encroachments of disease, we must improve our armamentarium. If the practice of the healing art ever becomes an exact science, it will be only when the crude-drug shotgun prescription, composed of the tinctures, fluid extracts, infusions, syrups and decoctions, of unknown strength and purity, is relegated to the past; and the unerring, rifle-repeating alkaloids are substituted in their stead.

The active principles are to the crude plant what gold, silver, copper, and lead are to the crude ore; and heretofore have been as difficult to obtain. To procure the precious metals, hidden away in the fissures and crevices of the rock, the ore must be crushed, ground and fused, as well as subjected to the action of chemicals. And so the precious elements of the plant, hidden away in the interstices of the leaf, stem and root of the crude drug, must undergo a similar process in order to obtain them—as if they were given us, not as a help, but as a reward.

The first alkaloid separated from the crude drug was in 1816, when morphine was obtained from opium by Sertuerner. In 1818 Pelletier and Caventou separated the great cerebro-spinal stimulant and tonic, strychnine, from *nux vomica*; and a year later discovered a weaker brother, brucine, in the same plant. In 1820 these delving chemists made, perhaps, a still greater discovery, when they found quinine in cinchona bark.

These few alkaloids, even at this early day, were used in preference to the much-used old preparations. But the idea of a

*Read before the Salt Lake Medical Society, October, 1900.

more general use of the alkaloids in medicine dates from 1848, when Burggræve, of the University of Ghent, urgently advocated their superior merits over the old crude-drug preparations.

Through the expert chemical touch of Geiger, Hesse, Mein, and Bley, belladonna had then given up its atropine, henbane its hyoscyamine, and aconite its powerful febrifuge aconitine. An added interest was manifested when the glucoside, digitalin, was obtained from digitalis, aloin from aloes, podophyllin from may apple, ergotin from ergot and caffeine from coffee and tea. The further march toward scientific medication was intensified when opium responded to further chemical research and yielded codeine and heroin, and when Mathison and Wright discovered that the cause of the "morning sickness" of the eldest daughter (morphine) was the presence of apomorphine, they acting as accouchers, and giving to us the most reliable emetic known. Investigation went on, and the hypnotic hyoscine was found in the meshes of the sleepy henbane, the expectorant emetin in the nauseous ipecac, the gouty colchicine in colchicum, the great heart-tonic and diuretic sparteine in broom corn, the unsurpassed diaphoretic pilocarpine in jaborandi. Then followed the great spinal sedative, cicutine, found in the obsolete hemlock, cocaine, the remarkable local anesthetic, from cocoa-leaves, while three additional active principles (digitalein, digitoxin, and digitonin) were born to the prolific digitalis—greatly increasing the therapeutic uses of this most valuable drug. I might add here, that the German digitalin prepared by Merck is a combination of the four active principles—digitalin, digitalein, digitoxin, and digitonin. The first three contract the arterioles and increase the strength of the heart-muscle, while digitonin dilates the capillaries and possesses therefore the diuretic properties of the drug.

There are now over fifty alkaloidal remedies quoted in the price-currents, and I believe the day is not far distant when the druggists, in self-defence, will be compelled to keep the whole of them in stock. When an alkaloid is given, but one effect is produced as a rule (unless they are mixed in solution), while the crude preparation, containing as it always does a number of active principles, may give (and often does) an effect the opposite of that desired; for the very good reason, that "the relative proportion of these several principles is never the same in any two given specimens of the drug."

The inaccuracy, so often observed, may reasonably be accounted for, too, by the fact that their solubility is so variable; some being insoluble in water, their presence could not be expected in infusions, while others being insoluble in alcoholic menstrua, would necessarily be absent from the fluid extracts. Of course most all active principles now in use are in combination with acids in the form of salts, making their solubility perfect.

When two alkaloids are obtained from the same plant, one of them is usually stronger than the other, *e.g.*, morphine and codeine, strychnine and brucine, etc.; and are spoken of as "primary and secondary" alkaloids—the secondary having the same properties as the primary, but in a minor degree.

Then again we find plants, the alkaloids of which are physiologically antagonistic, *e.g.*, eserine and calabarine from Calabar bean, and pilocarpine and jaborine from jaborandi. This fact alone is good and sufficient argument for the separation and use of the alkaloids alone, and it is from them only that definite effects can be obtained. If our patient's heart is flickering, none would resort to the tincture of nux vomica, whose alkaloidal strength is not known, but to the sulphate or nitrate of strychnine, the physiological action of which is so prompt and well understood. The same might be said as to the urgent use of the tincture of digitalis (made perhaps from leaves deteriorated by age or other causes), when the use of "Digitalin Germanic Merck" would so much more promptly meet the indication.

Most physicians who object to the alkaloids do not stop to investigate their marvellous uses—their rapid physiological action. Most of us, 'tis true, ride "hobbies" and some get into "ruts," from which they make no effort to extricate themselves. It is, indeed, a difficult thing to overcome a habit.

"Habit with him was all the test of truth.
It must be right; I've done it from my youth."

But the alkaloids that have been used for years and with which all are familiar, such as quinine, morphine, strychnine, atropine, pilocarpine, codeine and cocaine, have stood the test of time and experience, and none could be induced to abandon their use and substitute the crude drugs from which they are derived. Who would, at the present day of advanced ideas, use the cinchona bark for intermittent fever? The extract of nux vomica for a rapidly-failing heart? Would resort to the tincture or powdered opium to quiet acute pain? Would drench a patient with an infusion of jaborandi to make him perspire? Would trust to the efficacy of belladonna for night-sweats or hypersecretion? Or instil into the delicate eye a decoction of cocoa leaves for local anesthesia? None.

Some of the leading manufacturers of official preparations having recognized the great disparity in alkaloidal strength of plants grown in different soils and climates, in low or in mountainous districts, in the time of year the plants are gathered, the different means of curing and preserving them, as well as the great exposure to different degrees of heat and moisture, have put upon the market what are called "Standardized Preparations"; that is, after a fluid extract is made, and is found upon analysis to

be deficient in alkaloidal strength, they add enough of the known active principles to bring it up to the recognized standard; and on the other hand, if it is found to possess too much of the alkaloids, it is brought down by the addition of diluted alcohol. This is a step in the right direction, and if the house from which the drugs come is known to be reliable, it will satisfy many who are still sceptical about the little homeopathic-looking tablets, containing the strength of ten minims or a dram of the tincture. The little tablets, however, have no resemblance (except in size) to the "*similia similibus curantur*" idea, for within their limited area lurks a power that vanquishes disease and pain. "Like the leaves of the fresh rose, they bring out the sweet perfume of gratification." It is the old story of the heavy mace against the rapier of Damascus steel.—*Alkaloidal Clinic*.

Salt Lake City, Utah.

THE TREATMENT OF BRIGHT'S DISEASE.

BY JAMES TYSON, M.D.

Professor of Medicine, University of Pennsylvania.

(Digest.)

IN *The Therapeutic Monthly*, of Philadelphia, for June, 1901, Dr. James Tyson publishes a most interesting paper upon this subject. He says that the treatment of chronic Bright's disease must consist mainly in measures which will help nature accomplish her difficult task. What are these measures?

In the first place, it becomes desirable to do what we can to rest the kidney, to diminish its wear and tear, and to substitute its offices by those of other organs. By general acknowledgment, the first of these indications is best met by a selected diet, including drink. It is recognized that the chief office of the kidney is to separate urea and the xanthine compounds, represented especially by uric acid, and that all of these are derived from the proteid foods, of which lean meat and albumen of eggs are the type. It is manifest, therefore, that a rational treatment requires the restriction of proteid foods. The degree of this restriction must be determined by the severity of the case. In the severest forms the restriction should be as absolute as possible, although even in these the proportion of albumen contained in dilute milk does not seem excessive. The farinacea, represented by rice, potato, the various starches, arrow root, tapioca, and even white bread with butter, are perfectly allowable, and to these may be added, where digestion is good, the soft, juicy vegetables in season, such as peas, beans, spinach, asparagus and the like, as well as fruits in liberal quantities. Fats are also allowable when they can be digested.

What shall we say of meat and eggs? In bad cases all meats, including poultry and fish, as well as red and white meats, must be forbidden. In mild cases, where active symptoms are wanting, they should be very much restricted, say the equivalent of a small mutton chop, or an egg of which the yoke may be used in larger quantity than the albumen. An amusing error of practice has arisen from the habit of disenjoining red, or butcher meat, as it is sometimes called, as contrasted with the white meat of chicken and fish. Persons often consult me who I find are consuming large quantities of poultry and fish under the impression that they may eat unlimited quantities of these, provided they do not eat red meats,—forgetting that the composition of both is the same, and that the only difference is in the smaller amount of red blood in the white meats, and they are surprised when I tell them there is more danger in a half pound of chicken than in a quarter of a pound of roast beef.

There can be no doubt that a man can live and maintain his health on a fatty and farinaceous diet with such an amount of proteid as is contained in vegetables and milk. Such a diet may not be compatible with the highest physical and intellectual development, but that a man may work hard and subsist upon it is daily shown by the constant habit of the Chinaman and East Indian, who scarcely know meat from one year's end to another. Experiments which need repeating also go to show that vegetable proteids are attended with less zanthine eliminations than animal proteids.

No patient with chronic Bright's disease should use beef tea or bouillon, or the so-called beef-extracts as a diet. Over and over again it has been shown that these substances are concentrated solutions of the very salts which go to make up the solids of urine itself, in addition to a certain amount of albumen. Yet I am constantly consulted in cases where the physician is nourishing his patients on such food with the impression that he is doing a good thing, whereas he is either overworking the kidneys or overcharging the blood with toxic substances, or both. Whenever there is an aggravation of symptoms a recourse must be had to a milk diet. Diluted milk is to be preferred to skim milk, because in the latter the proportion of proteid remains unchanged, and the fat, harmless fat, is removed, while in diluted milk the proteid is reduced and much of the fat is retained, as is, of course, desirable.

Because of their irritating qualities, alcohol, strong wines, and malt liquors are disallowed. They all increase the work of the kidney, and tend to load the blood with toxic substances. At the same time it is doubtful whether any harmful results occur from the moderate use of light wines, like Moselle, Rhine, and light clarets, especially when freely diluted with water. It goes without saying that substances directly irritating to the kidney, such as mustard, horseradish and pepper, must be avoided.

The second indication supplements the office of the kidney by promoting the function of other organs, especially the skin and bowels. The action of the skin is favored by warm clothing, as well as by warm seasons and warm climate. Hence, the time-honored advice that the patient with chronic Bright's disease must wear wool next the skin. There is abundant evidence to show that a residence in a warm climate, and especially in a warm, dry climate, is favorable to cases of chronic Bright's disease, and in my book on Bright's disease I relate a striking instance of the salutary effect of a residence in a warm climate and the rapidly fatal effect of removal to a cold, damp one.

I have called attention to the alkalies in the shape of alkaline mineral waters and solutions of alkalies. Unfortunately, this country furnishes no really alkaline mineral waters east of the Rocky Mountains, and those of our Western country are not fitted for use. The imported Vichy and Vals waters fulfil the indication. The artificial Vichy, much advertised, contains practically no alkaline constituent. * *

As a part of treatment, including the promotion of skin action, I wish to mention a measure which I have found of signal service in improving the general condition of patients with chronic Bright's disease where not needed to avert serious symptoms like dropsy and uremia, viz., the frequent use of the vapor bath by one of the numerous convenient forms of apparatus known as cabinets and possessed by many families. A sweat thus produced continued for twenty minutes to half an hour just before going to bed has the happiest results in promoting the general well-being of the patient. His energy increases, he improves in appearance, the skin becoming clearer and smoother. Every other night is usually often enough, and the patient can manage it himself. Of course, the bowels should be kept regularly and even freely open, as in this way elimination is favored and the kidneys are rested.

CHRONIC GASTRITIS—REPORT OF A CASE.*

BY DR. CHAS. J. POLLARD, PRINCETON, KY.

CHRONIC gastritis is a condition of the stomach almost daily met with in this country in a more or less well-developed form, and to successfully treat these cases as they come to us is a goal we all desire to reach.

This disease is almost invariably associated with more or less indigestion manifested by many protein symptoms and accompanied by more or less active vomiting of the ingested materials.

*Read before the Meeting of Kentucky State Homeopathic Medical Society, May 29th and 30th, 1901.

The gastric secretions are almost without exception abnormal, many fermentative changes taking place in stomach contents, thus necessitating lavage more or less frequently for its relief.

The report and treatment of the following case, while not strictly in accord with true homeopathic prescribing, perhaps was so prompt in effect and has proved so lasting in results that I shall be willing to shoulder any censure that may be heaped upon me.

On May 21st, 1900, Mr. H. came to me from an adjoining country and applied for treatment, having been through the hands of two old school physicians in the last four years.

His age, 57; average build, lean, languid, dull, expressionless eyes, coated tongue, dirty, sallow-colored skin, gave history of indigestion for last four years, characterized by eructations of sour materials, pain after eating, nervous depression, sleepless nights, constipation alternating with occasional attacks of diarrhea, vomiting, not marked, loss of flesh, weak pulse, flabby muscles, in fact, a typical case of gastric catarrh in its chronic form.

From the history of treatment and the many symptoms pointing to the drug, I prescribed *nux vomica* and diluted muriatic acid after meals, believing the digestive fluids deficient in quantity. The patient reported some improvement in two weeks, his medicine was repeated and he was cautioned about diet, as formerly.

He reported again on the 21st of June, 1900, and gave history of an attack of rheumatism one week before, but still improving slowly of his stomach trouble.

In the meantime I had been studying this case arduously. I read of a case having been successfully treated with hydrozone and glycozone, then I concluded to use these as adjuvants when patient returned.

Owing to impossibility of regular lavage, I furnished patient with two ounces of hydrozone and directed him to add one ounce to a quart of sterilized water and take half a tumblerful half an hour before meals.

This, you will perceive, would procure a clean surface for the oncoming meal, though for the first few days it produced some discomfort, he said, from accumulation of gas.

Immediately after meals he was ordered to take a teaspoonful of glycozone in a wineglassful of water and three grains of *nux vomica*.

The next report was the 16th of July, when the improvement was very marked in his general appearance; patient was then able to eat without any dread of pain or discomfort.

Prescription was repeated and by August 1st all signs of any lesion of stomach had disappeared. Patient claimed to be well for the first time in four and one-half years.

Treatment was discontinued, of course. I saw the patient recently and he had practically no trouble since last August.

Dr. Finlay Ellingwood, in his excellent *Materia Medica*, says glycozone is one of the best manufactured products of the present

time in its action upon enfeebled disordered stomachs, especially if there is ulceration or catarrhal gastritis.

It is a most efficient preparation and I shall use it freely in the future.

TORONTO ORTHOPEDIC HOSPITAL.

IN submitting the Third Annual Report of the Toronto Orthopedic Hospital, the trustees note with pleasure the continued progress and steady growth of the work undertaken by them three years ago. This report presents a view of the work accomplished by the Hospital during the year ending September 30th, 1901. Some idea of the growth of the work can be gathered by a comparison of the following figures:

COLLECTIVE DAYS' STAY OF PATIENTS IN THE HOSPITAL.

First year.....	3,306 Days
Second "	5,582 "
Third "	8,599 "

TOTAL RECEIPTS.

First year.....	\$2,601.52
Second "	6,444.83
Third "	12,343.23

The outlook for the future of the Hospital was never so bright and encouraging as it is to-day. *It has long passed the experimental stage, and its history has emphatically demonstrated not only that it has a right to exist, but that it has become one of the indispensable public institutions of Canada.*

It is particularly gratifying to observe the warm appreciation of the Hospital's work which has been shown by the MEDICAL PROFESSION. Up to the present the large majority of the patients treated have come to the Hospital as the result of the advice of family physicians who wished such of their patients as needed orthopedic treatment to enjoy the benefit of special equipment and wide experience.

Aside from the general appreciation of the fact that the needs of the lame, crippled and deformed can best be met in hospitals established and equipped exclusively for their benefit, there is good reason to believe that the *policy adopted at the outset by the Trustees and staff in regard to charitable work* has contributed greatly to the confidence and popularity the institution now enjoys. Any hospital which allows patients who are able to pay to be treated free, and boarded and nursed in its wards for less than cost, is guilty of a grave injustice both to the public who support it by their donations and taxes, and to the medical men who give their services free of charge to the patients occupying its public and free beds. No patient has ever been refused admission to the Toronto Orthopedic Hospital because of inability to pay. In no public institution in the Dominion are the deserving poor more

warmly welcomed or considerately treated; but, on the other hand, the Hospital authorities insist that all who are able to pay their way wholly or in part shall do so.

A feature of the Hospital's policy now firmly established is the recognition of a "voluntary class." Patients are constantly being received who feel that their present circumstances do not justify a promise to pay any definite amount, but who do not wish to be regarded as public or free patients. Again, it is sometimes necessary to detain patients in the Hospital a longer time than was at first expected and provided for. In such cases the word "voluntary" appears in the Hospital ledger in connection with the patient's name whenever it is felt that the only kind and just course is to leave the account entirely to the patient's ability and sense of honor.

The patients of the Hospital have come from *nearly all parts of the Dominion*.

The Trustees are glad to be able to announce that, through the generosity of one of our citizens, they have been able to secure a *splendid new site at 100 West Bloor Street for the future development of the Hospital*. The large building upon the new premises is being remodelled. Substantial new additions are being built, and when the improvements are completed the patients of the Hospital will be comfortably located in a building excellently suited to their requirements. There will be wide verandahs on the east and south, and also a large lawn, and in connection with the public wards a splendid roof garden. There will be accommodation for 60 patients. This roof garden will be one of the most useful features of the Hospital, and will add very greatly to the comfort of the public patients.

To complete the necessary improvements and open the new hospital free of debt a total of \$30,000 will have to be expended. Only a comparatively small portion of this amount has yet been raised, and the work has gone on much more slowly than would have been the case had sufficient funds been guaranteed to complete what has been undertaken. At an early date it will be necessary to stop work altogether on the new property for a time unless more money is forthcoming. It will be most unfortunate if such delay can not be avoided, for the premises now occupied are constantly overcrowded, and the beneficent work of the Hospital is seriously hampered by the need of more room. There is no philanthropic work on which money could be more advantageously expended, and the Trustees desire to urge upon the public the duty of supporting this worthy cause.

Signed on behalf of the Board of Trustees,

JOHN POTTS, *President*.

The present list of Trustees includes such well-known men as :

Rev. John Potts, Rev. Frank Ryan, Rev. John Gillespie, Judge McDougall, J. J. Foy, M.P.P., J. I. Davidson, Warring Kennedy, A. E. Ames, W. J. Sheppard, E. R. Wood and T. Eaton.

**PROF. SCHWEITZER PROFOUNDLY IMPRESSED WITH
PARKE, DAVIS & CO.'S PLANT.**

PROF. H. SCHWEITZER, one of the foremost chemists in the country, Secretary of the American branch of the Society of Chemical Industry of London, England, ex-professor of chemistry in the great Heidelberg University, and a member of the committee on adulterations of the 'National Wholesale Druggists' Association, is at the Russell House.

Prof. Schweitzer comes to Detroit for the purpose of giving expert testimony in the case against Detroit men charged with counterfeiting trade-marks owned by Farbenfabriken, Bayer & Co., of Elberfeld, Germany. The Professor is well known to the courts in the East, as he is almost invariably called as an expert in cases where the questions involved are similar to those that will come before the Court in the Detroit case.

Prof. Schweitzer visited the plant of Parke, Davis & Co., at Detroit, yesterday afternoon, and this is what he says he found:

"The greatest industry of the kind in the world, the greatest beyond all question. The biological department was astounding. The physical assay work on animals is worth to a student a walk of one thousand miles. The scientific atmosphere is an inspiration, and the ingenious machinery a marvel. I was told that there were employed in the factory alone over 1,500 people, and that the firm has 207 travelling men employed.

"There are five American branches, I was told, and there are manufacturing plants in England and Canada. In the English plant are employed 250 persons. There is nothing wanting in this plant for the production of powerful, accurate, uniform and palatable medication. They have a circulating library for the employees, as well as an emergency hospital, and I understand the employees have decent hours and are well treated."

Prof. Schweitzer will remain in Detroit until the cases before the courts are disposed of. In the meantime he will visit the University of Michigan. This is his first visit to this city, and he expresses himself as being charmed with the city and with its people.

Attorney Allan H. Frazer, who is a friend of the professor, will see to it that he comes in contact with the bright side of Detroit life.—From the *Detroit Journal*, Tuesday, October 22nd, 1901.

The Canadian Journal of Medicine and Surgery

J. J. CASSIDY, M.D.,
Editor,

69 BLOOR STREET EAST, TORONTO.

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Orthopedic Surgery—E. E. MCKENZIE, B.A., M.D., Toronto, Surgeon to the Toronto Orthopedic Hospital; Surgeon to the Out-Patient Department, Toronto General Hospital; Assistant Professor of Clinical Surgery, Ontario Medical College for Women; Member of the American Orthopedic Association; and H. P. H. GALLOWAY, M.D., Toronto, Surgeon to the Toronto Orthopedic Hospital; Orthopedic Surgeon, Toronto Western Hospital; Member of the American Orthopedic Association.

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Doctors will confer a favor by sending news, reports and papers of interest from any section of the country. Individual experience and theories are also solicited. Contributors must kindly remember that all papers, reports, correspondence, etc., must be in our hands by the fifteenth of the month previous to publication.

Advertisements, to insure insertion in the issue of any month, should be sent not later than the tenth of the preceding month.

VOL. X.

TORONTO, DECEMBER, 1901.

NO. 6.

Editorials.

POISONING BY CANNED SALMON.

WE are indebted to Mr. Thomas Macfarlane, Chief Analyst of the Inland Revenue Department at Ottawa, for Bulletin 76, which gives details of the analyses of 100 specimens of canned salmon collected in June, 1900, at different places in the Dominion.

It appears that traces of metallic contamination (lead) were found in about one-half the number of samples, but the quantities were so small, 9 and 12 parts per million in some of the samples,

that it is doubtful whether they would be injurious to a consumer. No addition of preservatives was discovered in any of the samples.

It is further stated in the Bulletin that "only three samples are mentioned as having an objectionable odor, one of these being very bad, and two samples are characterized as stale. Thus, only five per cent. of the samples were found to be in any degree doubtful, so far as quality is concerned." This part of the report is particularly gratifying, since statements have appeared in the Canadian press to the effect that salmon of bad quality was frequently offered for sale in the markets of the country. To obtain trustworthy information as to the truth of this charge, a circular and a schedule were issued, December, 1899, by the Inland Revenue Department to physicians practising in Canada, requesting them to mention any cases of illness in their practice apparently attributable to the use of tinned foods. In reference to the information evoked by this circular, Mr. Macfarlane writes: "The number of cases actually given amounts to 970 for the whole Dominion. The period of observation sometimes means the whole time during which the physician has been practising, and in many other cases it extends back only a year or two. The average period I find to be seven years. The number of cases of disease apparently attributable to the use of tinned goods would, therefore, average about 138 per annum in the whole of Canada. The total number of cases which terminated fatally amounted to fifteen in the above-mentioned average period."

Mr. Macfarlane states that, in reply to the query in the schedule, "Have you judged the symptoms of poisoning to point to metallic or to ptomain poisons," the answers are indefinite; but, interpreting them reasonably, about 70 per cent. of the cases are attributed to ptomain, and 30 per cent. to metallic poisoning. In reference to the charge of ptomain poisoning, the physicians ascribed it to several causes, viz. (1) because the contents of the tin were too old; (2) because they were exposed too much to air after opening, and without being transferred to another vessel; (3) owing to imperfect exclusion of air previous to opening; (4) because of unsound character or inferior quality when originally packed. The suggestion is also offered by the physicians that "screws should be used in screwing the boxes in which the tins are packed, as nails sometimes happen to be driven through the tins, causing access of air.

There appeared also to be a unanimity of opinion among the majority of the physicians who made returns, that the time of filling the tins (month and year), and the name of the manufacturer or canning-factory, should be stamped on the tins, and that this provision should be secured by legal enactment. From the opinions expressed by the physicians reporting cases, and much more so from the reports of the analyst of the Inland Revenue Department, there is small reason to object to the use of tin cans in preserving salmon. The proportions of lead or other metal found in the samples of fish analyzed being small indeed, the undoubted cases of poisoning which occur from time to time will, therefore, have to be ascribed to some other cause, and we hope that analyses made in Canada will show what that cause may be.

We must confess to some regret that the analyses referred to in the bulletin do not throw any light on the fatal cases reported by the physicians, as having occurred in their practice; but this failure to discover the real poison need not excite surprise, for the analysts only looked for evidence of metallic contamination, as well as the presence of preservatives. A table showing the presence or absence of ptomains in one analyzed sample qualified as "stale but not bad," in another described as "colour pale, unpleasant odor," and a third as "color pale, bitter taste," would make these analyses much more instructive. We acknowledge with pleasure, however, that Mr. Macfarlane has, by a process of exclusion, made the road much straighter for chemists, who may be asked later on to report the poisons contained in tinned fish in Canada. That poisonous ptomains are present in putrid fish is well known to chemists. For instance, gadinin, $C_7H_{16}NO_2$ (Brieger), and ethylenediamin, $C_2H_8N_2$ (Brieger), are examples of poisonous varieties, and triethylamin, C_6H_5N (Brieger), is non-poisonous. An instructive case of ptomain poisoning from eating canned salmon is reported by Professor Vaughan in *Ptomains, Leucomains, Toxins and Antitoxins*, 1896, p. 56: "K—, a very vigorous man of thirty-four years of age, ate freely of canned salmon. Others at the table with him remarked that the taste of the salmon was peculiar, and refrained from eating it. Twelve hours later he began to suffer from nausea, vomiting, and griping pain in the abdomen. Eighteen hours after he had eaten the fish Professor Vaughan saw him. He was vomiting small quantities of mucus, colored with bile, at frequent inter-

vals. The bowels had not moved, and the griping pain continued. He was covered with a scarlatinous rash from head to foot. His pulse was 140, temperature 102 degrees F., and respiration shallow and irregular. After appropriate treatment he began to improve. The next day the rash disappeared, but the temperature remained above the normal for four or five days, and it was not until a week later that the man was able to leave his house." Professor Vaughan examined the salmon, and found a micrococcus present in great numbers. This organism, grown for twenty days in a sterilized egg, produced a most potent poison. The white became thin, watery, markedly alkaline, and ten drops sufficed to kill white rats.

The next time a marked case of poisoning occurs from eating canned salmon in Canada a bacteriological study should be made of the suspected fish.

Mr. Macfarlane deserves the thanks of the profession for Bulletin 76, which makes it reasonably clear that in such cases of poisoning from eating canned salmon as have fallen to the lot of Canadian physicians, lead or other metallic poisons have had no influence in producing the illness complained of. J. J. C.

ON THE PATHOLOGY OF CANCER LESIONS.

At the recent meeting of the American Medical Association, in the Section of Surgery, a symposium was held on the above topic. Dr. Roswell Park lead off with a contribution on the parasitic theory of cancer, and went so far as to declare that "a very marked advance has been made in our knowledge of the disease." He further made the astounding announcement that he was prepared to go so far as to declare that "the parasites have been discovered." He compared the life history of this malignant hyperplasia to vegetable, or tree-cancer, a species of foreign growth, sometimes seen in the vegetable kingdom. Consecutive metastatic invasion he regarded as an indisputable evidence of the infectiousness of the cancer process. He would regard bacteria as an etiological factor, but all parasitic life is not of this order. Auto-genetic infection, as along the track of a trocar, etc., he thought established beyond a doubt the infectious nature of cancer. He would attach little importance to the general failure of homo-

geneous implantation. Dr. Park closes his interesting summary by asserting that "cancer must remain as it always has been, a surgical disease, and if recognized early in an accessible part of the body and removed thoroughly, it can be absolutely cured." He is hopeful that we may establish a parasitical cause, and reach it by some mineral or vegetable substance or animal antitoxin. The State of New York contributed ten thousand dollars towards defraying the expenses of a laboratory last year, especially devoted to the study of cancer.

Those of us who are familiar with the clinical aspects of this terrible disease, with the history of the years of experimental effort made to unmask its mysteries, must yet remain very sceptical.

Laboratory and bacteriological researches have, without question, widely enlarged our knowledge of the morphological characters of malignant disease, but they have led to a most confused and needlessly complex classification, which has in no measure whatever enabled us to the more rationally deal with it.

Dr. Nicholas Senn followed Park, dealing with "The Present Status of the Carcinoma Question." His article embraces the latest literature on the subject up to date. His views as to initial changes are similar to Colen Levins; *i.e.*, he believes that the primitive nucleus is in "a matrix of epithelial cells;" or, in other words, that it has an histogenetic origin, its primary location being mesoblastic, with a matrix of embryonic epithelial cells. With Williams and others he strongly opposes the parasitic theory. He says that "the histology and histogenesis of carcinoma speak against the parasitic origin of this disease." Regional metastasis, he believes, takes place through the lymphatics, general metastasis through the systemic circulation.

In connection with this question of dissemination, it would be interesting to have an explanation of those retrograde metastases, as for example, when, after the excision of a breast, the stomach, liver, pancreas, or ovary is attacked.

Notwithstanding the active participation of the lymphatics, said to take place in malignant disease, from an extensive study of the normal and pathological elements of the tissues, we must say that, inasmuch as the lymph vessel can be only studied with great difficulty in the healthy state, and of the so-called "lymph glands" we know nothing definite of their functions, and should

not accept without convincing proof any conclusions based on disordered function of these structures. It is difficult also to accept the assumption that metastatic invasion occurs through the veins or arteries. A cancerous ulcer stops at nothing, laying waste to everything in its path. Epithelial infiltration penetrates the vessel's wall early. We have seen it invade and completely obliterate the lumen of the common carotid artery, as well as the internal jugular vein, and yet there was no metastasis anywhere. Here we had whole shoals of epithelial seed forced into the vessel's lumen. Several other somewhat similar cases have come under our notice, in which if the theory of vascular dissemination held good, we should have following widespread infarcts of the internal organs. But some such theory must be invoked to support the theory of the "localists."

Professor Senn denies that cancer is on the increase. In this respect he is undoubtedly correct, for we are confident that a large number of cases operated upon for cancer possess no malignant elements at all. These are the cases of "cures."

Of the causes of cancer enumerated, we must rule them all out, predisposing and active, except one; and it is doubtful if that one should specially stand out here. This one is "heredity," because this influences nearly every non-contagious disease known.

Age certainly should be struck out as a cause.

Trauma.—Of the thousands annually injured, but few suffer from cancer. Can it be that this is a coincidence? The same may be said of scars, warts, and local irritations. Inference is not proof. Sir James Paget and Roger Williams, of London, have called attention to the curious fact that sots, syphilitics and prostitutes rarely acquire cancer, and that it works its greatest ravages among the abstemious, well-to-do and careful livers. Discarding, then, the parasitic elements, what are the well-known and definite causes of cancer?

Here is the mystery.

As Senn well says: "As we are still ignorant concerning the essential etiology of cancer, the treatment up to the present time has been largely of a palliative and empirical nature." Further he adds: "The only real advances made have been in the operative treatment. . . . The operative treatment of carcinoma has undergone a decided improvement during the past decade." Early "radical" operation is advised. With a confession of

our absolute lack of knowledge of the causes of cancer, and a rejection of its parasitic origin, it is inconceivable how we can admit of real advances in its treatment. In all truth, in treatment as in the etiology, of substantial advances we have made none. It won't do to so far encroach on the credulity of the profession as to say that a lesion is local, while at the same time it is admitted that its real essence or cause is unknown, and that final, effective influence on the atypical epithelia can only be effected through constitutional measures. On this point we should speak out in unequivocal terms, for the reason that at the present time we must regard every case of genuine clinical cancer as invariably mortal, with very rare exceptions. We protest that the early and wide cut is a pernicious and dangerous doctrine to hand down to a rising generation of practitioners; first, because an early diagnosis of cancer is out of the question, until the full clinical picture is in evidence. The wide cut, the large dissection, is a cruel mutilation on a patient the subject of cancer. In mammary cancer it leaves the whole anterior chest wall stripped of its cutaneous and muscular investment, the shoulder displaced backward, with a bloated, stiff and painful arm; but, what is worse than all, the truce of relief is not lengthened. In one patient so treated we saw widespread relapse in three months.

No honest, conscientious practitioner can be guilty of definitely promising to cure a patient afflicted with cancer.

Dr. Senn is to be congratulated for extending the time-limit for the cure-test to ten years. Possibly one per cent. treated by any means may attain that limit.

T. H. M.

LANGUAGE IS ONLY THE INSTRUMENT OF SCIENCE.

IN our July number an editorial appeared, entitled "A Plea for Union among Canadian Physicians." Beginning with an allusion to the proposed establishment of a French Medical Association for Quebec and the United States, we mentioned a few objections to the project, such as would occur to a Canadian physician who supports the cultivation and diffusion of medical science in Canada by Canadians, and who attaches but a mediocre interest to the language through which the scientific idea is conveyed. We instanced the bilingual Parliament at Ottawa as an example of how

effective work could be carried on in affairs of State, and suggested that the work of a medical association in this country could be done in sections, and that the French members could read their papers and discuss questions in their own language, under the leadership of their own officials. A closing observation was made to the effect that if French Canadian physicians place language on a higher plane than patriotism, the English-speaking physicians of Canada may be attracted towards the great medical organization of the United States.

Dr. Arthur Simard replies, at considerable length, in the September number of *Le Bulletin Medical de Quebec*, and, if his views must be accepted as correct, there is little or no reason to ever expect a combination of English and French physicians in this country, even for the very neutral and unexciting purpose of cultivating medical science.

He attributes the very noticeable absence of French Canadian physicians from the meetings of the Canadian Medical Association principally to the fact that there are 1,500 French-speaking physicians in the Dominion, and asks, "What profit could they obtain from deliberations they could not understand?" Very little, we confess, and yet, even if we admit the accuracy of Dr. Simard's assertion, we must regard it as decidedly uncomplimentary to the educational status of French Canadian physicians. If the assertion were correct, it would be in opposition to the observations of a good many professional and non-professional persons, who think that many French Canadian physicians practising in different parts of Canada to-day, understand the English language, and some of them speak it with facility.

Why, then, establish a permanent medical association whose principal function will be the usage of the French language? To restrict the work of a scientific association in Canada to the French or English language is to elevate mere expression to a place it has no right to occupy in a scientific assembly.

When Koch, the German scientist, read his epoch-making address at the London Congress of Tuberculosis last July, he used the English language. Nocard, a Frenchman, who took up the gauntlet, replied in French; but he understood what the German scientist had said. Had Nocard's answer been in English, it would have been more effective from an oratorical point of view, but oratory does not count for much in the expression of opinions

on a subject of intrinsic importance. Physicians who intend to express their views in great associations and congresses must at least understand English, French, and German; to understand only one language is to court failure. Were a medical association to be largely intended for social purposes; were its programmes to be made up of a modicum of science, with a good deal of poetry and oratory, polyglots would not be in demand, and their presence might even be inconvenient.

French Canadian physicians, instead of secluding themselves, should imitate their Norman ancestors and invade Anglo-Saxondom; instead of building their medical association on a one-language theory, they should take advantage of their undoubted facility in the use of two languages; or, to put our idea in a concrete form, they should develop and expand the influence of a bilingual, medical parliament, and help to make it the centre of the best medical thought in Canada. Although Dr. Simard may not re-echo this view, we think he is too loyal a Canadian to oppose it. In the meantime, let both the English and the French in Canada strive, in friendly emulation, to accomplish their best work. It is pleasing to learn that graduates of Laval University have attained very creditable positions in the medical profession of Quebec and America, and if they reach still greater heights at home and abroad, the graduates of the universities of Ontario will be delighted. Should the graduates of Laval University imitate the scientists of France in bringing to completion original investigations, or in making important discoveries, expressed, of course, through the medium of the French language, their good fortune would rouse no feeling of envy in Ontario. On the contrary, physicians of every race in this country would feel so much patriotic interest in the glory of a Canadian medical discovery, that they would not stop to inquire in what language it was first expressed.

J. J. C.

AN "ABSENT" TREATMENT FOR THE CHRISTIAN SCIENTISTS.

THE jackal half closed his eyes, curved his fingers around, and then looked through them in the good old drawing-master way, and tried to find enough to make a sketch (in proper perspective) of the models posing, a few weeks ago, in our Assize Court as types of

Christian Science. Alas, the attempt failed. Nothingness does not lend itself to curve and line. "Matter is not—all is Mind." (?)

If Christian Science embodied (I beg the cult's pardon) simply a religious belief or form of worship, no medical journal would be found having aught to say against it. With any form of religion or agnosticism medical journalism has nothing whatever to do, and medical men have not the slightest wish to pose as spiritual experts. They are, however, fully equipped and capable experts upon all that assails or deals with the human body, and they are jealous of the honor of their profession, and will never unfurl the white flag of truce to such enemies of public health as the Christian Scientists by their actions have shown themselves to be. These peculiar people refuse to recognize their present physical "make-up"; they assert they are bullet-proof; in fact, as they have done away with any material body, and "all is Mind," they must believe they are flying around in their minds. Would to God they were; they would do much less harm a-singing in "the choir invisible," instead of croaking about eczema, dyspepsia, diphtheria, with which they have been afflicted in their *thinkers*!

Somehow, a couple of weeks ago enough of them to fill a court-room blew in, and their apparently very material selves filled all the available space, and without modesty young women stood up and told of "gatherings in their heads," "tonsillitis," and other ailments cured by Christian Science treatment "at home" and "absent." Continuing, they still further unbosomed themselves by asserting that for years they had not been subject to disease, in fact had been "kept from error" by Christian Science. Oh, tell the truth, people—kept from disease by the very material supervision of Dr. Charles Sheard and his competent workers; kept from disease by that grim sentinel called the Public Health Board; kept from disease by your honorable neighbors, who respect the material Temple and consent to its isolation, and the placarding of the spot they call Home, as a warning and a protection to you lest the plague should come nigh your dwelling and one of your household "pass on" attended by a Christian Science healer.

How shall we treat this spook that is trying to appear and appeal to the medical world? immortalize her in a poster; surely she is a fitting subject. Material nothingness has neither shape nor make, like unto a woman in a "raglan," neither fore nor aft to her—and tell us, do you know which way she is going?

W. A. Y.

"CONSISTENCIE'S A JEWELL."

THE following extracts from a prominent Toronto daily newspaper, which we place in parallel columns, are, to put it mildly, rather incongruous:

October 29th, 1901.

"A prominent officer in South Africa attributed his immunity from typhoid fever to his habit of drinking bad water whenever he felt thirsty, without boiling it or adopting any other precaution. Let us honor the scientists for the great service they have rendered the world, a service the world has never been able to repay. But we need not turn in alarm from any article of diet or any habit of life to which the race has been accustomed for ages. The race becomes immune to the danger of its environment through the survival of those best able to resist."

November 2nd, 1901.

"Toronto in evidence of its healthfulness has a remarkably good record of typhoid to show this year. Last month there were only sixteen cases, as compared with twenty-nine last year, and during the year thus far there have been only eighty-one. This is the lowest record in ten years. Within that time the number of cases for October has been as high as 156, and for a year nearly a thousand. The present low typhoid record is a good index of the *quality of the city water*. A couple of months after one elevation of the intake pipe the typhoid cases numbered over a hundred. When it is considered that the death-rate in typhoid is one in five, the citizens have reason to congratulate themselves upon the present condition of affairs."

In the first extract, the observation of the officer who defied the rules of hygiene and common sense, is quoted approvingly, as if it demolished the contention of medical science, *i.e.*, that typhoid fever is caused by a specific germ, which is present in water fouled by the urine and feces of typhoid patients. The plain suggestion to the reader is that avoidance of foul water is foolish, and that, although bacteriologists deserve credit for their labors in discovering pathogenic microbes in the fluids people drink, yet their views must not be taken seriously or their advice implicitly followed, because the human race has become accustomed to these microbes, and is immune to their attacks. If the newspaper's reasoning in the first extract is correct, it certainly does seem superfluous to filter and boil foul water before drinking it, because, as typhoid fever has been in existence for centuries, it is about time that "the survival of those best able to resist" it should be to the fore. In the second extract, however, fresh ground is broken, and we learn that the present low typhoid record in Toronto is an index of the

quality of the city water, or, in other words, that the water, being relatively pure, the citizens are not attacked by typhoid fever as much as they were in former years, when the city water was notably bad. The theory of obtaining immunity to typhoid fever by cultivating a taste for foul water, is cloaked in the second extract, although this newspaper had already stated that, by the use of foul water we might secure the *survival* of those "best able to resist" that disease. Probably the last opinion is correct; but then, what a mortality would result!

Recently, in a Toronto weekly newspaper, a reflection was made "upon the general cocksureness of a great many of our scientific barriers against microbes," and the principal reason given was that a prominent gentleman, who had just died from typhoid fever, was remarkable during his lifetime for a rigid adherence to the rules of hygiene. No allowance was made for absence from home and the accidental use of infected water or milk in another city, or in a railway car. The editor of the weekly concluded that because the gentleman referred to had caught typhoid fever and died of it, "immunity is as far removed as ever."

No person is immune to typhoid fever unless he has had it, and acquired an actual, *natural* immunity, or has been rendered passively immune by inoculation with typhoid virus. Any non-immune person may catch typhoid if he drinks fluid infected with the Eberth bacilli, or eats uncoked food which they have infected. Persons who live hygienically are not likely to catch typhoid fever, but if they drink infected water or milk, or eat food which has been exposed to the attacks of flies, they run the same risk of catching typhoid fever as those who never take any precaution against it. It is easy to avoid one source of typhoid fever, viz., infected water, by always using boiled fluids, such as tea, coffee, beer, or boiled water. If food is protected from flies, and is thoroughly cooked when presented at the table, another source of typhoid infection is removed.

J. J. C.

EDITORIAL NOTES.

Perineal Prostatectomy.—Parker Syme, M.D., clinical professor of Surgery in the Bellevue Hospital Medical College, New York, says, in a paper read before the American Medical Asso-

ciation, June, 1900, he does not favor the performance of suprapubic cystotomy as part of the operation for prostatectomy. He operates through the perineum, but without making any wound above the pubis. In one case he was able to crowd the prostate down by manual pressure from above, because the abdominal wall was thin and easily impressed. In another case he succeeded in reaching the prostate and enucleating its three lobes by means of a special retractor, which he devised. It consists of a rubber tube made of the size and consistence of the ordinary perineal drainage-tube, on one end of which is cemented a thin rubber bulb; the bulbous end is inserted into the bladder through the membranous portion of the urethra, which has been opened, as after Alexander; when the bulb is well within the bladder it is dilated by being filled with sufficient water to expand it into a bulb 2 1-2 inches in diameter; then traction can be made on the strong rubber tube sufficiently to bring the prostate into the perineal wound within reach of the finger, enabling the operator to perforate the capsule and to remove the gland. The operator has used the straight median incision, not having found it necessary to use one of the transverse or curved incisions of Zuckerkandl, Dittle, or Rydygier, but in certain cases one of these incisions would have great advantage over the shorter ones of the median line. The point the author wishes to make is that prostatectomy can readily be done entirely through the perineum, and that it should not be combined with a suprapubic cystotomy. The author feels that the perineal drainage of the bladder is of importance when a cystitis is present, but that it is not a necessity otherwise, and if the patient presents himself for operation before cystitis has been established, the operator should endeavor to remove the prostate without opening the urethra or the bladder. In closing, the author wishes to urge upon his confreres the importance of the early recognition of obstructing prostatic hypertrophy, and also that they should submit these patients to a radical operation before the cystitis, prolonged pain, infection and fatigue have put them in a condition where they are unfit to undergo a surgical operation.

The Worship of Æsculapius compared with Christian Science.

—In the treatment of many diseases, at Epidaurus, Athens, and other places in Greece where temples were erected to Æsculapius, much attention was devoted by the priests to a regulated diet and

good hygiene, as well as the use of various medicines. They seem to have been quite successful in curing gout. Dr. Barnes says, in a paper on "Roman Medicine and Roman Medical Practitioners": "We find the priests prescribing plain food, hot and cold baths, active gymnastic exercises, counter-irritation, and a great variety of medicaments. The following thanksgiving of one cured of the gout is interesting: "Oh! blessed Asklepios, god of healing, it is thanks to thy skill that Diaphantes, relieved of his incurable and horrible gout, no longer moves like a crab, no longer will walk upon thorns but has a sound foot, as thou hast ordained." Cicero, the great Roman orator, evidently thought the worship of Æsculapius more conducive to health than taking physic, for he says "Nec ego multorum ægrorum salutem non ab Hippocrate potius quam ab Æsculapio datam judico." Recently a Christian Scientist emphasized the same idea in another form, for he avowed that he had been cured of life-long eczema, gout, and various other diseases, including a fondness for *liquor and tobacco*, by Christian Science. He had been treated by Drs. Startin and Shortt, dermatologists in England, without a permanent cure of his eczema being effected. Within a year after coming into Christian Science the eczema disappeared. The gout, a concomitant of eczema, had returned for a short time. This result, the witness contended, had been attained by Christian Science. All of which is seemingly true. Had he lived a couple of thousand years ago, he might, after spending a season at Epidaurus, have ascribed the cure of his gouty eczema to Asklepios.

An Alien Trained Nurse.—We are indebted to the editor of the *Detroit Medical Journal* for a novel application of the word "alien," and a good laugh, by the way. In an editorial which appeared in the September number of that journal, a disparaging allusion was made to the nurse, who waited on the late President. The distinguished patient was said to have been "left to the rule of thumb care of an alien trained attendant." To understand this criticism aright, it may be remarked that the nurse referred to, Miss Mohan, is a Canadian by birth, though she received her training at Buffalo General Hospital. Obviously the Detroit editor's criticism was a slap at the professional qualifications of the nurse, as well as a reflection on the medical men who placed her in charge of their patient. As no evidence obtainable so far

shows that Miss Mohan performed her duties "by the rule of thumb," the substantial portion of this charge proves to be a work of the imagination. That she is an "alien" is true enough, and we are delighted to know that Canadian nurses in the United States do not find their alienism a bar to preferment. In the October number of the *Detroit Medical Journal*, the editor explains that he did not employ the word alien in its ordinary meaning, "foreign," "not native." He meant to say that Miss Mohan was alien to Buffalo, as was necessarily the case, when she was imported from Washington, D.C.

Adulteration of Effervescent Sodium Phosphate.—Of the 64 samples of effervescent sodium phosphate which had been purchased in different pharmacies, all over the Dominion, only 13, or 20 per cent., have been found genuine by the district analyst. The greater number of the adulterated samples have been so characterized because they do not correspond with the requirements of the British Pharmacopeia. Mr. McGill shows that a freshly-prepared sample of effervescent phosphate of sodium should contain 10 per cent. of its weight of P_2O_5 . Of the 64 samples analyzed, three are not effervescent phosphate. The remaining 61 show the following results, as far as phosphoric acid is concerned:

Less than 2 per cent. P_2O_5 2 Samples.

"	3	"	"	4	"
"	4	"	"	4	"
"	5	"	"	10	"
"	6	"	"	13	"
"	7	"	"	7	"
"	8	"	"	2	"
"	9	"	"	4	"
"	10	"	"	9	"
"	11	"	"	3	"
"	18	"	"	3	"

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Alkaline citrates and tartrates are possessed of purgative properties, and it is supposable that in some of the above instances they may replace the phosphate of sodium, as far as medicinal properties are concerned; but, then, the purchaser of effervescent sodium phosphate, which is now defined in the British Pharmacopeia, is entitled to receive the article he asks for, and not a substitute.

Alcohol or Strychnine in Pneumonia.—The clinical uses of strychnine are multiplying to an extraordinary degree. In pneumonia it renders very good service, so much so that some practitioners are substituting it for alcohol in that disease. There is really no conflict between these two drugs, each of which has its advantages. Although generations of physicians succeed each other, no routine treatment has yet been discovered for pneumonia, in which the principal object is to support the powers of life until the crisis is passed. Alcohol has considerable food value, lessens waste and improves appetite and digestion. Given in small regulated doses, viz., 1-2 oz. of whisky every three or four hours, it is of the greatest value; pushed to excess, it may cause coma, although there is certainly great tolerance of alcohol in pneumonia. Some practitioners begin the administration of strychnine, *per os*, at the outset of a case of pneumonia, giving 1-30th to 1-15th of a grain every four hours, and continue it throughout the disease. Should urgent need for stimulation arise, the drug is given hypodermically, in doses of 1-15th of a grain every two or three hours. Modern authorities commend it highly. "In no other disease does strychnine possess greater potency for good than in pneumonia, if wisely employed" (Anders).

To Repress Reckless Expectoration.—Section 194 of the Sanitary Code of New York City forbids, under penalty of fine or imprisonment, spitting on the floors of public buildings, or in cars and ferry-boats. Inspectors have also been appointed to discover those who violate this rule. The passage of a similar code would be in order now in Toronto. Smokers and chewers of tobacco would object; but in public buildings and in cars where people are obliged to come in close contact, the rights of the few should be subordinated to those of the many. All public schools should be equipped with spittoons, so that children may be taught in time to dispose of their sputa properly.

DR. C. A. HODGETTS was appointed, on November 5th, Medical Health Officer for the unorganized districts of Ontario.

THE *Alkaloidal Clinic* makes a very generous offer to every new subscriber in page advertisement appearing in this issue. Turn to their advertising page, Doctor, and read their proposition. It will be to your interest.

The Physician's Library.

BOOK REVIEWS.

Nothnagel's Encyclopedia of Practical Medicine. Edited by ALFRED STENGEL, M.D., Professor of Clinical Medicine in the University of Pennsylvania; Visiting Physician to the Pennsylvania Hospital.

It is universally acknowledged that the Germans lead the world in internal medicine; and of all the German works on this subject Nothnagel's "Encyclopedia of Special Pathology and Therapeutics" is conceded by scholars to be, without question, the best system of medicine in existence. So necessary is this book in the study of internal medicine that it comes largely to this country in the original German. In view of these facts, Messrs. W. B. Saunders & Company have arranged with the publishers to issue at once an authorized edition of this great encyclopedia of medicine in English.

For the present a set of some ten or twelve volumes, representing the most practical part of this encyclopedia, and selected with especial thought of the needs of the practical physician, will be published. The volume will contain the real essence of the entire work, and the purchaser will therefore obtain at less than half the cost the cream of the original. Later the special and more strictly scientific volumes will be offered from time to time.

The work will be translated by men possessing thorough knowledge of both English and German.

Each volume will be edited by a prominent specialist on the subject to which it is devoted. It will thus be brought thoroughly up-to-date.

The American edition will be more than a mere translation of the German; for, in addition to the matter contained in the original, it will represent the very latest views of the leading American specialists in the various departments of internal medicine. The whole system will be under the editorial supervision of Dr. Alfred Stengel, who will select the subjects for the American edition, and will choose the editors of the different volumes.

Unlike most encyclopedias, the publication of this work will not be extended over a number of years, but five or six volumes will be issued during the coming year, and the remainder of the

series at the same rate. Moreover, each volume will be revised to the date of its publication by the American editor. This will obviate the objection that has heretofore existed to systems published in a number of volumes, since the subscriber will receive the completed work while the earlier volumes are still fresh.

The usual method of publishers, when issuing a work of this kind, has been to compel physicians to take the entire system. This seems to us in many cases to be undesirable. Therefore, in purchasing this encyclopedia, physicians will be given the opportunity of subscribing for the entire system at one time; but any single volume or any number of volumes may be obtained by those who do not desire the complete series. This latter method, while not so profitable to the publisher, offers to the purchaser many advantages, which will be appreciated by those who do not care to subscribe for the entire work at one time.

This American edition of Nothnagel's Encyclopedia will, without question, form the greatest System of Medicine ever produced, and the publishers feel confident that it will meet with general favor in the medical profession. (Reprint from publishers.)

A Treatise on Surgery by American Authors. For Students and Practitioners of Medicine and Surgery. Edited by ROSWELL PARK, M.D., Professor of Surgery in the University of Buffalo, N.Y. New (3rd) edition, in one royal octavo volume of 1,350 pages, with 692 engravings and 64 full-page plates, in colors and monochrome. Cloth, \$7.00 net; leather, \$8.00 net. Philadelphia and New York: Lea Brothers & Co.

When the third edition of Roswell Park's Surgery reached us, we at once noticed that it was a most imposing volume, and, if appearances were everything, to see the book would alone be a great temptation to purchase it. Looks, however, are not everything, especially in medical literature, and the material contained within the cover boards is what must be judged. All that is required in the case of this book to enable one to judge, is to choose almost any chapter and read it carefully, when the only conclusion that can be come to as to the value of the work is that few textbooks on the Practice of Surgery have appeared in recent years which will meet with more popular professional approval than that edited by Dr. Roswell Park. It is but two years since the second edition was placed in the hands of the profession, and yet a third is called for. There are medical books published in several editions, the trouble being, however, that very little revision is made in each, so that one buying a second or third edition is very little better off in the end. Not so with Park's Surgery. The editor states in his preface that his book has been "thoroughly revised," and he speaks truly, as almost every chapter has been gone

over carefully, and the changes called for made, until the purchaser of edition No. 3 secures what is practically an entirely new work. There are well on to 700 pictures throughout the volume (nearly double the number appearing in the last edition), so that it is profusely illustrated. The full-page plates are exceedingly beautiful, their execution being most correct in detail.

In the list of collaborators, the places of Drs. J. H. Etheridge and H. H. Mudd, who, since the publication of the last edition, have "crossed that bourne whence no traveller returns," have been filled most acceptably by others almost as well known to the profession. Dr. I. P. Lyon has contributed an able chapter on Blood Examination Applied to Surgery, a subject of considerable and daily increasing importance. Dr. Park and his contributors deserve hearty congratulation on the result of their labors.

W. A. Y.

A Practical Treatise on Diseases of the Skin. By JOHN V. SHOEMAKER, M.D., LL.D., Professor of Skin and Venereal Diseases in the Medico-Chirurgical College and Hospital, of Philadelphia; Physician to the Philadelphia Hospital for Diseases of the Skin; Member of the American Medical Association, of the Pennsylvania and Minnesota State Medical Societies, American Academy of Medicine, and of the British Medical Association; Fellow of the Medical Society of London. Fourth edition, revised and enlarged, with chromogravure plates and other illustrations. New York: D. Appleton & Company. 1901.

To the general practitioner, as well as the dermatologist, Dr. Shoemaker offers an excellent work of reference. His extensive knowledge of the science and art of medicine, as well as his specialty, enable him to present the subject of skin diseases in a very full and discursive manner. One does not like to criticise a work exhibiting so many excellencies, but it seems that the author, who is now recognized as an authority on dermatology, would be justified in presenting his own views as to the treatment of a disease without reference to the opinions of other writers or their formulæ. A multiplicity of formulæ is not conducive to accuracy in prescribing, and is a burden to the memory.

In the first part of this work are to be found well-written chapters on the anatomy and physiology of the skin, and the symptomatology, diagnosis, pathology, etiology and treatment of skin diseases. In the second part the author adopts a modification of Hebra's well-known classification of skin diseases, as being the most commonly accepted system now in vogue. In the third part may be found an extensive collection of formulæ.

Several fine chromogravures appear in the work, exhibiting cases of psoriasis, lupus, alopecia areata, dermatitis venenata, pen-

phigus, etc. The more of that form of describing a disease of the skin we get in a book on dermatology the better we like it. The publishers deserve credit for the handsome appearance of the book.

J. J. C.

A Text-Book of Pharmacology. Including Therapeutics, Materia Medica, Pharmacy, Prescription-Writing, Toxicology, etc. By TORALD SOLLMANN, M.D., Assistant Professor of Pharmacology and Materia Medica, Western Reserve University, Cleveland, Ohio. Royal octavo volume of 880 pages, fully illustrated. Philadelphia and London: W. B. Saunders & Company. 1901. Cloth, \$3.75 net. Canadian Agents: J. A. Carveth & Co., Toronto.

It has to be admitted that there is frequently too lax a system of teaching in the majority of our medical schools and universities, upon that important subject, pharmacology. Students, as they graduate at the termination of their five-years' course do not have a sufficiently intricate knowledge of drugs and their action to enable them to treat and watch the course of many diseases in their different phases while under the influence, physiologically, of the various drugs. In this connection we may say that it is a most valuable thing for a medical student to, if possible, spend a year or more in a drug store, as such work will so acquaint him with drugs and the manufacture of their different preparations as to give him often the whip-hand over those of his fellow-practitioners who have not had that practical experience. Sollmann's Pharmacology will be found to be eminently practical, the author having had in mind that an intimate relation exists at all times between pharmacology and the practice of medicine. He has been careful not to go into unnecessary details, and has laid stress upon, what is most important to the physician having the life of his patient in his hands, the *accurate* use of drugs, as without accuracy there cannot be efficiency. We read with profit the chapter upon prescribing, and found it most instructive. The section upon toxicologic analysis is well worth reading.

A Reference Hand-Book of the Medical Sciences, embracing the entire range of scientific and practical medicine and allied science, by various writers. A new edition, completely revised and rewritten. Edited by ALBERT H. BUCK, M.D., New York City. Volume III, illustrated by chromo lithographs and 676 halftone and wood engravings. New York: Wm. Wood & Co. 1901.

The publishers of this splendid work are to be congratulated upon the fact that but a month or two have elapsed since Volume II. appeared. It is no small achievement for any firm to get out a series of volumes as large and massive as those of The Reference

Hand-Book of the Medical Sciences, and were the publishers not among the largest and most responsible in the country, such prompt delivery could not be accomplished. We find that such names as the following appear in the list of contributors to Vol. III.: Drs. T. L. Bennett, of New York; Walter A. Bastedo, of New York; R. P. Bigelow, of Boston; Peter H. Bryce, of Toronto; L. D. Bulkley, of New York; Frank Buller, of Montreal; Charles H. Burnett, of Philadelphia; C. G. Coakley, of New York; Allan McLane Hamilton, of New York; Frederick G. Finlay, of Montreal; St. John Roosa, of New York; Beaumont Small, of Ottawa; and Grover W. Wende, of Buffalo, N.Y.

Volume III. comprises from Chloralamid to Equilibrium, so that it is at once seen what a wealth of information must be contained within its cover boards. It would be a very difficult matter to select any scientific subject of medical interest that is not at least touched upon or referred to at length. Almost everything in pharmacology, anatomy, physiology, medical dentition, dermatology, and a vast number of other subjects between the letters C and E, will be found in the volume, so that the book is in reality an encyclopedia or a dictionary on a comprehensive scale, a work that will be found to be invaluable for reference by a physician who may not, just then, have at his disposal the leisure to consult the text-book giving what he wants but at too great length. If the rest of the volumes of The Reference Hand-Book are as complete and thorough as Vols. I., II. and III., it will be a wonderfully valuable addition to medical literature.

W. A. Y.

Modern Obstetrics: General and Operative. By W. A. NEWMAN DORLAND, A.M., M.D., Assistant Demonstrator of Obstetrics, University of Pennsylvania; Associate in Gynecology, Philadelphia Polyclinic. Second edition, revised and greatly enlarged. Handsome octavo, 797 pages, with 201 illustrations. Philadelphia and London: W. B. Saunders & Co. 1901. Cloth, \$4.00 net. Canadian Agents: J. A. Carveth & Co., Toronto.

Another edition, revised and enlarged, of this deservedly popular and excellent manual of obstetrics will be welcomed, especially by students of medicine and busy practitioners. The general lines and divisions of the first edition which was so cordially and favorably received by the medical profession have been maintained, but the present work has been thoroughly revised, largely rewritten and considerably enlarged. The text is further elucidated by the addition of numerous new illustrations, many of them being original and highly commendable. Recent pathology and bacteriology of the many morbid conditions encountered in obstetrics have been given full attention. The chapters on the physiology and hygiene of pregnancy and labor, as well as those descriptive

of the physiology and management of the new-born, and infant mortality, are quite scientific, instructive, and add materially to the value of the manual. By the addition of several new sections, including serum therapy, the surgical treatment of puerperal sepsis, placental transmission of disease, and the role of the liver in the production of puerperal eclampsia, the work emphatically perpetuates the title of "modern obstetrics." A strong reaction in the profession has developed against the old-established theory of attributing all cases of puerperal eclampsia to a renal inadequacy; the present tendency is to ascribe the albuminuria and convulsive seizures to the same cause, an autointoxication, the liver being the offending organ in which the poison is developed. This theory is given due weight, and is scientifically discussed in this edition. The subject-matter of the work is arranged with skill, and is written in a clear and forcible style, its descriptions being comprehensive, yet not too detailed. Its teaching is decidedly clinical and practical, whilst due consideration is given to all physiological and pathological obstetric conditions. We feel sure that the warm reception given this first edition will be none the less enthusiastic over the present one.

G. T. M'K.

International Clinics, a quarterly of Clinical Lectures and especially prepared articles on Medicine, Neurology, Surgery, Therapeutics, Obstetrics, Pediatrics, Pathology, Dermatology, Diseases of the Eye, Ear, Nose and Throat, and other topics of interest to students and practitioners, by leading members of the medical profession throughout the world. Edited by HENRY W. CATTELL, M.D., Philadelphia, with collaboration of John B. Murphy, M.D., Chicago; Alex. D. Blackader, M.D., Montreal; H. C. Wood, M.D., Philadelphia; T. M. Rotch, M.D., Boston; E. Landolt, M.D., Paris; Thos. G. Morton, M.D., and Chas. H. Reed, M.D., Philadelphia; J. W. Ballantyne, M.D., Edinburgh; and John Harold, M.D., London; with regular correspondents in Montreal, London, Paris, Leipsic and Vienna. Vol. III., eleventh series. 1901. Philadelphia: J. B. Lippincott Co. Sole Canadian Agent: Charles Roberts, 1524 Ontario Street, Montreal.

Among the list of contributors to Vol. III. of Series XI., *International Clinics*, appear such names as Drs. John Abercrombie, of Charing Cross Hospital, London; W. H. Battle, of St. Thomas' Hospital; D. R. Brower, of Rush College, Chicago; Solis Cohen, of Philadelphia; T. D. Crothers, of Hartford; J. B. Deaver, of Philadelphia; Edebohls, of the N. Y. Post-Graduate; Thos. H. Manley, of New York; and A. H. Tubby, of London. It will therefore be seen that to judge alone from the standing and the ability of writers for Volume III., it must be one of the best yet issued.

We read, among other lectures, that by our friend and collaborator, Dr. Thos. H. Manley, Professor of Surgery in the New York School of Clinical Medicine, upon "Strangulated and Gangrenous Hernia." This lecture covers about fifteen pages, and is written in a thoroughly practical manner, being well and profusely illustrated with half-tones of gangrenous gut, the operation for anastomosis, etc., etc. This contribution by Dr. Manley to Volume III. is but another evidence of his ability as a specialist in intestinal surgery.

Volume III is a capital one, and fully up to its predecessors.

W. A. Y.

Atlas and Epitome of Bacteriology. A Text-Book of Special Bacteriologic Diagnosis. By Professor Dr. K. B. LEHMANN, Director of the Hygienic Institute in Wurzburg; and R. O. NEUMANN, Dr. Phil. and Med., Assistant in the Hygienic Institute in Wurzburg. From the second enlarged and revised German edition. Edited by GEORGE H. WEAVER, M.D., Assistant Professor of Pathology, Rush Medical College, Chicago. In two volumes. Part I., consisting of 632 colored figures on 69 lithographic plates. Part II., consisting of 511 pages of text, illustrated. Philadelphia and London: W. B. Saunders & Co. 1901. Cloth, \$5.00 net. Canadian Agents: J. A. Carveth & Co., Toronto.

We do not think that we will be considered at all fulsome when we state that for a long time there has not been published in any country a series of books which are as valuable to the busy practitioner as Saunders' Medical Hand-Atlases. With such an atlas for reference, it is a very simple matter indeed for the physician to pick up points of the utmost value to him in an exceedingly short period, whereas, had he to study his subject through the channels of the ordinary text-book, he would not only have to spend a much longer time, but, we fear, have the subject impressed upon him in a far more cursory fashion. As we have stated before in our review columns, the value of any book, be it a text-book, hand-book, or atlas, is very greatly added to by well executed illustrations, and more especially so when so delicately colored as are many of the plates in Saunders' Medical Hand-Atlases.

The Atlas of Bacteriology is divided into two volumes. Vol. I. is the Atlas proper, and Vol. II. the text. For those doing original work, we can safely say that these two volumes will prove of the greatest value. The colored plates could hardly be improved upon, and if the cost of the presswork alone of Vol. I. is considered, it will be seen that the price charged for the work as a whole, \$5.00, is exceedingly cheap indeed. Vol. II. is subdivided into two sections, the first treating of general and the second of special bacteriology.

Human Physiology. Prepared with Special Reference to Students of Medicine. By JOSEPH HOWARD RAYMOND, A.M., M.D., Professor of Physiology and Hygiene in the Long Island Hospital, and Director of Physiology in Hoagland Laboratory, New York City. Second edition, entirely rewritten and greatly enlarged. Handsome octavo volume of 668 pages, 443 illustrations, 12 of them in colors, and 4 full-page lithographic plates. Philadelphia and London: W. B. Saunders & Company. 1901. Cloth, \$3.50 net. Canadian Agents: J. A. Carveth & Co., Toronto.

In many branches of medical study, there is almost a surplus of literature. In fact, some subjects are "written to death," rendering it no easy task for many to expend the amount necessary to buy all of the books as they come off the press. On the other hand, Human Physiology is a subject which few authors, many of whom are well able to undertake the work, feel inclined to write upon. It seems almost strange that such should be, as that subject is the basis of all medical study, in fact is the groundwork for all future achievement in the study of medicine and surgery.

We do not hesitate to say that Professor Raymond's book on physiology, especially his second edition, is one which will be found to be a most acceptable addition to the literature already available on the subject. We have read with more than usual pleasure the chapter devoted to the reproductive functions. In it we find that Dr. Raymond impresses his readers with the variety of opinions held as to the relation of menstruation to evolution. Laryngologists will read with interest what he says on voice production, in connection with which Professor French devotes some space to that most interesting topic, laryngeal photography. The effect of alcohol upon mouth and gastric digestion, the subject of deglutition, and the gastric movements, shown by the use of the X-Ray, are given considerable space. The book is, above all, practical; that alone recommending it as one worth possessing.

The Practice of Obstetrics. By American Authors. Edited by CHAS. JEWETT, M.D., Professor of Obstetrics and Gynecology in the Long Island College Hospital, New York. Second edition, revised and enlarged. Illustrated with 445 engravings, 48 of which are in colors, and 36 colored plates. New York and Philadelphia: Lea Brothers & Co.

It is about two years now since the first edition of this work came from the press, and yet the author is called upon to rewrite it. This is an honor not accorded to every one, and goes to show that Dr. Jewett contributed to medical literature something worth while.

In the second edition we find a book considerably larger than

its predecessor, beautifully printed, with excellent illustrations, which would do credit to any publishing house in America. The section devoted to the Pathology of Pregnancy we perused with care and a considerable amount of pleasure, a great deal of it not being found in the first edition. The chapter by Dr. Henrotin, of Chicago, is particularly well written, and presents the subject of ectopic gestation fully and most practically. Part VIII. is devoted to obstetric surgery, those contributing to this department being, besides the author, Drs. Hunter Robb and John O. Polak. The chapter on the induction of abortion and of premature labor covering 13 or 14 pages, is just as practical as anything we have read upon that subject. We cannot resist congratulating our old friend and countryman, Dr. Clarence Webster, now of Chicago, upon his contribution to the book, dealing with the Anomalies of the Mechanism of Labor. Over and above those already mentioned, the following names appear also as contributors: Drs. J. W. Williams, H. N. Vineberg, J. M. Van Cott, C. D. Palmer, W. P. Manton, Allan McLane Hamilton, J. C. Edgar, R. L. Dickenson, Montgomery Crockett, Henry Dwight Chapin, J. C. Cameron, A. H. Buckmaster, A. T. Bristow and E. H. Bartley.

Text-Book of Bacteriology. By GEORGE M. STERNBERG, M.D., LL.D., Surgeon-General U. S. Army. New York: William Wood & Co.

After five years we have a new edition of Sternberg's Bacteriology, somewhat smaller in bulk, perhaps, than the manual which appeared in 1892, and is practically the first edition of this work, but still a very considerable volume; although a good deal has been omitted which appeared in 1892, additional chapters have been added. This edition is evidently an attempt to strike a happy medium between a small laboratory work and a manual on the subject, and we doubt very much if it is successful.

The early chapters on morphology, classification, methods of staining and methods of culture, are much as they were in the earlier editions; some portions might very well have been left out, others might certainly have been extended. For instance, it is a great pity that the author omitted the methods of preparation of culture media recommended by the meeting of American Bacteriologists which has rendered the work in American laboratories so exact.

The same criticism applies to other portions of the book. When, for instance, we examine the new chapter on protective inoculation, we find that the discussion of the literature up to a certain point is almost too full, yet recent and important work, especially on diphtheria, is absent.

We are certainly disappointed with this book; it practically shows no advance since 1896, and very little since 1892, the date

of the Manual. It would have been better if the author had considered seriously the question of rewriting many portions of the book, and in the case of special sections handing the work over to selected specialists, as was done with Flugge's Text-Book when it was necessary to issue a new edition of that work. J. J. M.

The Principles of Hygiene: A Practical Manual for Students, Physicians, and Health Officers. By D. H. BERGEY, A.M., M.D., First Assistant, Laboratory of Hygiene, University of Pennsylvania. Octavo volume of 495 pages, illustrated. Philadelphia and London: W. B. Saunders & Company. 1901. Cloth, \$3.00 net. Canadian agents: J. A. Carveth & Co., Toronto.

This book is not an exhaustive treatise on the various subjects included under the name of hygiene, but is intended to convey a knowledge of the underlying principles upon which hygienic practices are based. It is quite modern, containing references to the latest discoveries, and presents up-to-date views of the subject. The chapter on ventilation is very readable, the latest opinions being well and clearly stated. The chapter on heating contains all that can be usefully said on that subject.

In Chapter III., Food and Dieting, we have found much interesting information. The nutritive value and cost of food, as given by Professor Atwater, are presented. It must be conceded that, in the present condition of medical practice, when Hippocrates seems to be yielding to Æsculapius, a good working knowledge of food values is a useful part of the practitioner's educational outfit. In reference to important subjects, viz., disinfection, sewage disposal, and purification of water, the information given is precise and valuable.

The quarantine laws of the United States are given in full. The metric system is used throughout the book, but the relative values in terms of the English system are given in an appendix. Certainly a most useful book, not only to physicians, but to every well educated person. A copy should be found in the library of every newspaper in Canada. J. J. C.

Anatomy, Descriptive and Surgical. By HENRY GRAY, F.R.S., Lecturer on Anatomy in St. George's Hospital, London. Thoroughly revised American from the 15th English edition. In one imperial octavo volume of 1246 pages, with 780 illustrations. Price, with illustrations in black, cloth, \$5.50 net; leather, \$6.50 net. Price, with illustrations in colors, cloth, \$6.25 net; leather, \$7.25 net. Philadelphia: Lea Bros. & Co.

It can be safely asserted that there are few, very few, of the younger practitioners of to-day who do not have reason to remem-

ler Gray's Anatomy. This work has for many years been looked upon as the best book extant on the subject of anatomy, both descriptive and surgical. It is true that the edition in use when many of us labored in the dissecting room over the tangles of the brachial plexus, or tried to fathom the difficulties of the pons varolii, or still worse, the ventricles of the brain, was not by any means as complete as the one now under consideration, but as a standard work, one on which the medical student could place all reliance, to take the necessary number of marks, or even pass a brilliant examination, Gray's Anatomy took first place. We find in the new fifteenth edition that almost every chapter has been gone over and in many places additions of value have been made. The sections upon the brain and nervous system, as also that on embryology, have been almost rewritten, and a large number of colored illustrations added, giving the book a peculiarly handsome appearance, and one which in point of detail could hardly be excelled. There is little fear that the work will be superseded by any other of greater merit.

W. A. Y.

Murray: Thyroid Gland. Part I., 112 pages. Price, 7s. 6d. London: H. K. Lewis, 136 Gower Street.

The book before us is the first instalment of a work upon the thyroid gland, by Professor George R. Murray, of Newcastle, in which he embodies not only his own researches, but also a very complete discussion of the work and observations of others. The whole work constitutes really an extension of the author's Goulstonian Lecture, and the article upon diseases of the thyroid gland in the Twentieth Century Practice of Medicine.

Part I. deals first with the histology and physiology of the gland, with a very full discussion on the results of the experimental removal of the gland in animals. The remaining chapters of this part are devoted to the pathology and treatment of myxedema and cretinism. The book promises to be a most complete and scientific monograph. The illustrations are all from original photographs, and are well reproduced.

J. J. M.

A Text-Book of Diseases of Women. By CHARLES B. PENROSE, PH.D., formerly Professor of Gynecology in the University of Pennsylvania; Surgeon to the Gyneccean Hospital, Philadelphia. With 221 illustrations. Fourth edition, revised. Philadelphia and London: W. B. Saunders & Company, 1901. Toronto: J. A. Carveth & Co. Price, \$3.75.

In March, 1900, we had the pleasure of reviewing the third edition of Dr. Penrose's work on Diseases of Women, and congratulate the author on the necessity for a fourth edition. To keep pace, in a published work, with the growth and development

of the science and art one has taught, is indeed a pleasure. In this book-loving age, the number of books on diseases of women is not small, and authors have not been slow to recommend and picture a great variety of operations for the same lesion. The prevailing excellence of Dr. Penrose's book is that he recommends but one plan of treatment for each disease, and for this the student and the general practitioner will forever hold him in grateful remembrance.

Such changes as have been rendered necessary by an increased knowledge of gynecology, appear in this edition, but the work has been carefully done, and there are just eight pages more of reading matter in the fourth than in the third edition. J. J. C.

Text-Book of Nervous Diseases, being a Compendium for the use of Students and Practitioners of Medicine. By CHAS. L. DANA, A.M., M.D., Professor of Nervous Diseases in Cornell University Medical College; Visiting Physician to Bellevue Hospital; Neurologist to Montefiore Hospital; ex-President of the American Neurological Association; Corresponding Member of the Societe de Neurologie, etc. Fifth edition. With 244 illustrations. New York: Wm. Wood & Co. 1901.

It is now four years, or thereabouts, since Dr. Dana had published the last edition of his work on nervous diseases. During that short length of time the book has received a most flattering reception at the hands of the profession, the author being looked upon as one of the chief exponents of neurology on this side of the Atlantic. The name of Dana has for a number of years been recognized as that of a specialist in nervous diseases, so that it is little wonder that anything proceeding from such an author would command respect. We have run over the fifth edition of the text-book, and find that the author has devoted a good deal of time to its revision. A chapter on general paresis will be found in this volume which did not appear in the fourth edition. It is very interesting, and makes an addition of value. We find lots of new illustrations, which also materially add to the work as one of reference. We feel that Edition V. will meet with the endorsement of many medical practitioners, resulting in a large and encouraging sale all over America.

A Laboratory Course in Bacteriology. For the use of Medical, Agricultural, and Industrial Students. By FREDERICK P. GORHAM, A.M., Professor of Biology, Brown University; Bacteriologist to the Health Department, Providence, R.I. 12mo volume, 198 pages, with 97 illustrations. Philadelphia and London: W. B. Saunders & Co. 1901. Cloth, \$1.25 net.

Bacteriology is essentially a laboratory study. It is only by actual laboratory work that it can be taught in such a manner as

to serve any useful purpose. It is also a subject of very general scientific interest. Courses in bacteriology are no longer confined to the medical schools, but are being introduced into colleges and agricultural and industrial schools. This volume has been prepared as a guide to the practical details of laboratory work. It is intended to present the subject in such a general way as to lay a broad foundation for later specialization in any branch of bacteriology. By a judicious selection the course can be made to conform to the requirements of medical, agricultural, or industrial students.

The illustrations are practical, and will assist the student very much. There is a full list of stains and reagents used in the study of bacteria in the appendix, with their formulæ and mode of preparation. Also a description of bacterial measurements by photography, as recommended by Wilson and Randolph in the *Journal of Microscopy*. An excellent help to the laboratory student. J. A. Carveth & Co., Toronto, are the Canadian agents.

A. J. H.

Dose-Book and Manual of Prescription-Writing: with a list of the Official Drugs and Preparations, and the more important Newer Remedies. By E. Q. THORNTON, M.D., Demonstrator of Therapeutics, Jefferson Medical College, Philadelphia. Second edition, revised and enlarged. Octavo, 362 pages, illustrated. Philadelphia and London: W. B. Saunders & Co. 1901. Bound in flexible leather, \$2.00 net. Canadian Agents: J. A. Carveth & Co., Toronto.

During the seven years that have elapsed since the first edition of Dr. Thornton's *Dose-Book* was published, a vast number of changes have come about, not to speak of the additions being constantly made to what are known and spoken of as official drugs. For that reason, it is a wonder that the author did not bring out his revised edition sooner than he has done. His second edition is a great advance upon his first, being fuller and more complete in every way. The chapters devoted to "Prescription-Writing" and "Incompatibles" have been rewritten very largely, besides additions and changes to those sections devoted to vegetable drugs and organic extracts. In the appendix, chapters upon synonyms and poisons have also been added.

Practical Dietetics: Food Value of Meat. By W. R. C. LATSON, M.D., Editor of *Health-Culture*. New York: The Health-Culture Co., Publishers, 503 Fifth Avenue.

What can I eat? This faces us at every turn, and the matter of meat-eating in particular is becoming an important subject for consideration. The question of the quality of meat products as now produced brings it before the public in a very practical way.

In this manual Dr. Latson makes a strong plea for the elimination of meat from the category of foodstuffs, as being unnecessary for the proper maintenance of physical and mental vigor. He goes on to show how all food elements found in meat can be obtained by the use of such products as cereals, nuts, vegetables, and fruits. The author calls attention to the fact that the flesh of animals is laden with poisonous waste, due to the constant breaking down of tissue, and this taken into the human body often causes weakness and disease. There are many interesting and valuable facts presented by the writer, and we certainly commend this booklet to the thoughtful reader.

W. H. P.

A Text-Book on Obstetrics. By BARTON COOKE HIRST, M.D., Professor of Obstetrics in the University of Pennsylvania. Third edition, thoroughly revised and enlarged. Royal octavo, 873 pages, with 704 illustrations, many of them in colors. Philadelphia and London: W. B. Saunders & Co. 1901. Cloth, \$5.00 net. Canadian Agents: J. A. Carveth & Co., Toronto.

It is not by any means an easy matter for any one, desiring to purchase a work on obstetrics, to make a choice in a hurry, especially if he is desirous of securing something that is at the same time comprehensive, practical, and fully up-to-date. The reason that this is the case is simply that there are now a large number of books on obstetrics in print, almost all by good authors, and each one having within its covers the very best of material. Dr. Hirst's Text-Book of Obstetrics is no exception to the rule, as if there is one point about it worth special note it is that it is exceedingly practical, and that is what is wanted more than anything else. The third edition has been revised carefully and a lot of new material added. We find the chapter dealing with the pathology of labor and that on obstetric operations considerably larger than before. The feature of illustrations is also a notable one, and embellishes the book to quite a considerable extent, rendering its perusal more interesting and a great deal more instructive.

Atlas and Epitome of Special Pathological Histology. By Doctent Dr. HERMANN DURCK, of the Pathological Institute of Munich. Edited by LUDVIG HEKTOEN, M.D., Professor of Pathology in Rush Medical College, Chicago. Vol. II.—Liver, Urinary Organs, Sexual Organs, Nervous System, Skin, Muscles, Bones. With 123 colored illustrations on 60 lithographic plates and 192 pages of text. Philadelphia and London: W. B. Saunders & Co. 1901. Cloth, \$3.00 net. Canadian Agents: J. A. Carveth & Co., Toronto.

Some little time ago, W. B. Saunders & Co. issued Volume I. of this atlas. That volume was devoted to circulatory organs, respir-

atory organs, and gastro-intestinal tract, with 62 colored plates. This volume covers the liver, urinary organs, sexual organs, nervous system, skin, muscles, and bones, and is embellished with no fewer than 123 colored illustrations. Volume II is the larger and, to the casual reader, the better and more complete of the two.

This series of atlases is now well known, and has met with a phenomenally large sale. It is little wonder that, looking at the enormous cost of production, the publishers were at first a little fearful; but we feel that they have found by this date that the medical profession appreciate and at once recognize a good thing in medical literature. In this series the illustrations form the strong point of attraction. In this atlas they are no exception to the rule, being excellent from every standpoint, and correct in the most minute detail, even to the colors which show the different staining processes.

Materia Medica, Pharmacy, Pharmacology and Therapeutics.

By W. HALE WHITE, M.D., F.R.C.P., Physician to and Lecturer on Medicine at Guy's Hospital, London; Author of a Text-Book of General Therapeutics. Edited by REYNOLD W. WILCOX, M.A., M.D., LL.D., Professor of Medicine and Therapeutics at the New York Post-Graduate Medical School and Attending Physician to the Hospital; Visiting Physician to St. Mark's Hospital; President of the American Therapeutic Society; Fellow of the American Academy of Medicine, etc. Fifth American edition, thoroughly revised. Philadelphia: P. Blakiston's Son & Co., 1012 Walnut Street. 1901. Price, \$3.00 net. Canadian Agents: The Chandler & Massey, Limited, Toronto.

We have read over carefully several chapters of Dr. White's *Materia Medica*, and from the first were impressed with the clearness of the author's method of expression, and the manner in which what, as a rule, is not the most interesting subject to read, is presented. It is a difficult matter to render any book on pharmacology and therapeutics attractive, there being so much that is dry and uninteresting. Dr. White has, however, overcome that, and has given the profession a book, not large and cumbersome, but one that, by being "short, sweet, and to the point," will be found readable and instructive alike to the medical student and the professional man.

Captain Ravenshaw. Toronto: The Copp, Clark Company.

The hero of the story, Captain Ravenshaw, is a professional soldier, not engaged on the tented field, but campaigning among the London taverns. Scorning to make an honest living, he is forced to resort to many diverting tricks and devices in order to

keep body and soul together. Whatever ill may be said of his morals, nothing but praise is due for his swordsmanship, which, if anything, borders on the marvellous. His ability to withstand for a considerable time the soporific effects of a stiff dose of opium is of a piece with his swordsmanship. The Captain at last finds his reward in the heart and hand of "the fair maid of Cheapside," who, in spite of his battered reputation, preferred him to an elderly dandy to whom her parents had betrothed her against her will for motives of worldly advancement. The dialogue flows very evenly, and without being noticeably archaic, has a marked Elizabethan flavor. We suppose that the Latin words on the book-cover, "Deus pascit corvos," were meant to be "Deus pascit corvos."

J. J. C.

The Ready Reference Hand-Book of Diseases of the Skin. By GEO. THOS. JACKSON, M.D., Chief of Clinic and Instructor of Dermatology, College of Physicians and Surgeons, New York; Consulting Dermatologist to the Presbyterian Hospital, New York, and to the N.Y. Infirmary for Women and Children; Member of the American Dermatological Association and of the N. Y. Dermatological Society. Eighty illustrations and three plates. Fourth Edition, thoroughly revised. New York and Philadelphia: Lea Bros. & Co. 1901.

During the ten years (nearly) since the first edition of this hand-book, vast changes have taken place in the treatment of most, if not all, skin diseases. The study of dermatological diseases has considerably advanced, so that what was ten years or so ago an obscure condition and one most difficult to relieve, can now be treated and often cured in a very short space of time. Dr. Jackson has revised his hand-book with care, adding some colored plates and a few illustrations, till in its fourth edition it is almost more of a text-book than anything else. Among the diseases, a description of which has been added to this edition, are Lichen pilaris, Lichen annularis, Impetigo of Bockhardt, Granuloma Necrotica, Fordyce's diseases of the lips, Verruga, Peruana and others.

A Manual of the Practice of Medicine. By GEORGE ROE LOCKWOOD, M.D., Professor of Practice in the Woman's Medical College of the New York Infirmary. Second edition, revised and enlarged. Octavo volume of 847 pages, with 79 illustrations and 20 full-page plates. Philadelphia and London: W. B. Saunders & Company. 1901. Cloth, \$4.00 net. Canadian Agents: J. A. Carveth & Co., Toronto.

We know of no better adjective to apply to the second edition of Lockwood's Practice of Medicine than "boiled down." The great trouble with works upon this subject has been that they are far too lengthy, and that the authors "lose themselves" and forget

that their readers are not anxious for bulk, but on the other hand are specially desirous of securing only what is practical and will assist them in their everyday work and labor. Dr. Lockwood has borne this in mind, and wisely so, and any one taking up his last edition will agree with us that the author has dispensed with theory and adhered to terse facts. New chapters have been added on gastropnoxis, Reichmann's disease, and bubonic plague, the balance being rearranged and in many parts rewritten.

The Pathology and Treatment of Sexual Impotence. By VICTOR G. VECKI, M.D. Third edition, revised and enlarged. Philadelphia and London: W. B. Saunders & Company. 1901.

This important branch of study has been certainly overlooked for how few students of medicine to-day ever see any literature on this subject. Yet we are constantly being consulted along these lines. The author discusses the whole subject of sexual impotence in a very searching and scientific manner. We believe the former edition was exhausted in less than two years. In this edition the book has been thoroughly revised, new matter added, especially to the portion relating to treatment, and we can recommend the work as a scholarly treatise on its subject. We wish to add that J. A. Carveth & Co., Canadian Agents, are handling it at the moderate sum of \$2.00.

W. H. P.

The Physician's Visiting List (Lindsay and Blakiston) for 1902. Fifty-first year of its publication. Philadelphia: P. Blakiston's Son & Co., 1012 Walnut Street.

For any firm of publishers to be able to boast that for over half a century they had been publishing each and every year a book, be it a text-book or visiting list, is a sufficient guarantee that that book must be nearly "all right." This can be said of Blakiston's Visiting List, and now for the fifty-first year in succession it is placed in the hands of the profession. In addition to the table of signs, and metric decimal system of weights and measures, besides a dose table, the publishers devote two pages to the consideration of asphyxia and apnoea, and give a table for calculating the period of utero-gestation. Physicians can secure this visiting list either in the regular edition, suitable for 25 to 100 patients a week, or a perpetual or monthly edition, the prices ranging from \$1.00 to \$2.25.

D'Ri and I. By IRVING BACHELLER, author of "Eben Holden." Toronto: William Briggs.

Very prettily bound, and writ large and clear upon the page is this tale of pioneer days along the shores of the great St. Lawrence. The story abounds with incident—"strenuous life," if you like it—in fact here and there a chapter that is almost a hair-curler, then a bit of delightful description. The places men-

tioned, interwoven with the action of the period, are very familiar to the Canadian reader, and some of the incidents a part of the history of almost a century ago. The book is proving itself to be of interest to a varied class of readers. Already the sale has been large, and the book "D'Ri and I," should find itself among the Christmas gifts of the fifteen-year-old "hopeful" who in these days represents the adventurous and "Tommy Atkin" propensities of the family.

W. A. Y.

Circumstance. By S. WEIR MITCHELL, M.D. Toronto: The Copp, Clark Company, Limited. Cloth.

Less voluminous than "Dr. North and His Friends," simpler than "Hugh Wynne, Quaker," yet a story that interests and charms. The physician still lives in the author as he carefully diagnoses a few more types of men and women—the crafty adventuress, the poor victim of heredity, the charming yet "cat-like" society bud, the Anglican priest, in whose very weakness and foibles lies his strength, the splendid young physician, and the rugged medico. What a pleasant hour we spent with them all! Such a company do not often drop in to keep us from our forty winks. Bid them welcome, Canadian doctor, around your Christmas fireside.

W. A. Y.

Elements of Practical Medicine. By ALFRED H. CARTER, M.D., M.Sc., Fellow of the Royal College of Physicians, London; Professor of Medicine, University of Birmingham, etc., etc. Eighth edition. London: H. K. Lewis, 136 Gower Street, W. C. 1901.

Being merely an introduction to the study of medicine, this work is intended chiefly for students. It is a short, practical text-book, is well written, and contains very little useless matter. Such books can not take the place of the more elaborate and complete text-books or systems of medicine, but are useful aids for beginners.

A Manual of Diseases of the Nose and Throat. By CORNELIUS COAKLEY, A.M., M.D., Professor of Laryngology in the University and Bellevue Hospital Medical College, New York City. Second edition, revised and enlarged. New York and Philadelphia: Lea Brothers & Co., 1901.

The first edition was characterized by the clearness of the typography, the number and excellence of the illustrations and plates, and the care taken in the selection of therapeutic measures and operations indicated in various disease conditions. This is no "Sunday Illustrated." The second edition differs chiefly in the addition of a dozen illustrations, and a chapter on the affections of the upper respiratory tract in the infectious diseases.

J. M. M.

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